The NATIONAL GEOGRAPHIC MAGAZINE

Vol. XIX AUGUST, 1908 No. 8

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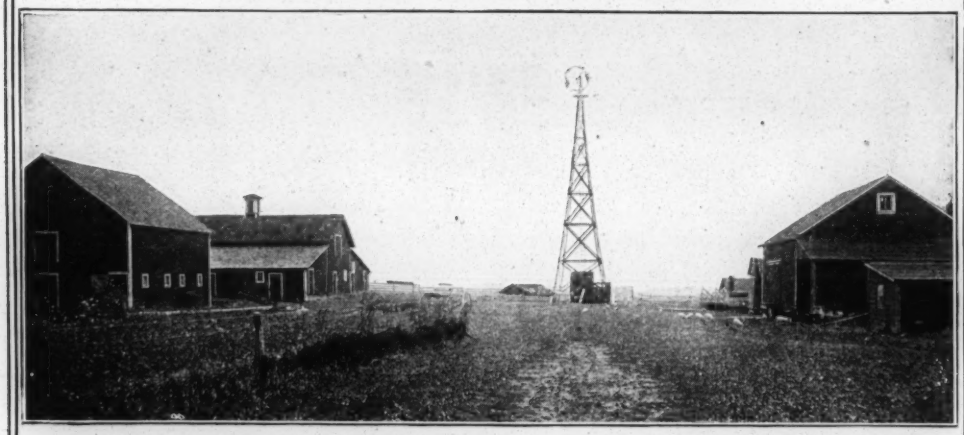

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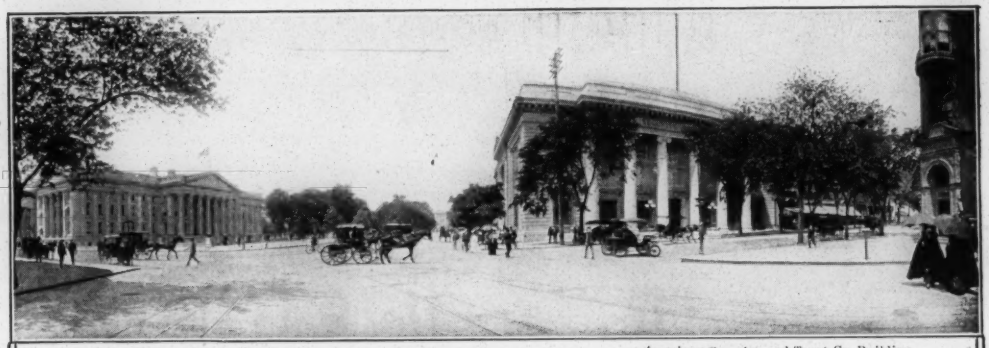

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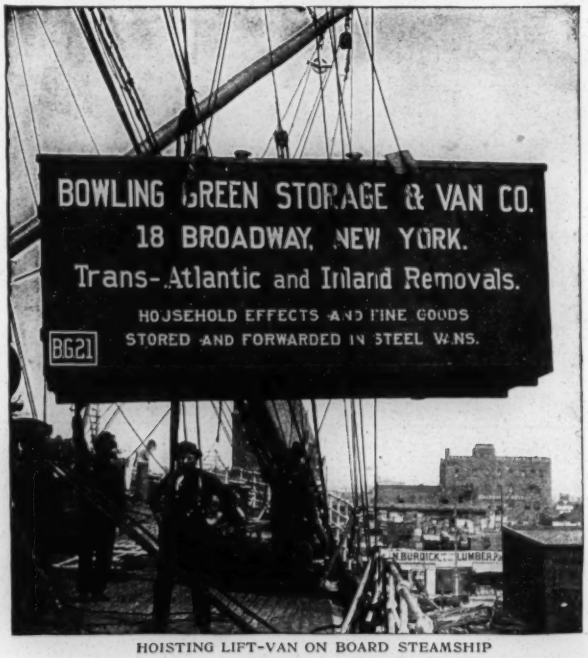
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VOL. XIX, No. 8 WASHINGTON AUGUST, 1908

THE NATIONAL GEOGRAPHIC MAGAZINE

FURTHER NOTES ON DUTCH NEW GUINEA*

BY THOMAS BARBOUR

With photographs by the author

IN the previous number the houses of the Geelvink Bay region were described. It remains now to present notes on the houses of Djamna and the villages in Humboldt Bay.

The houses of the former region are not over the water, but are set back in the woods. They have high-pitched roofs and are built of the midribs of sago-palm leaves. These are set up side by side and are held in place by rattan lashings. The roofs are covered with palm-leaf thatch, as usual. The only means of entrance or exit is a single square hole, often 10 feet from the ground; this is reached by a notched pole, the usual substitute for a ladder, or a large log set up slanting, through which rattan loops pass at various levels. These houses are dark, smoky, and smelly, and as they were peopled by a tribe who were decidedly "put out," or offish, for some reason, while we were with them, though they are usually quite friendly, our notes are not detailed as to their furnishings.

In Humboldt Bay, on the frontier of German New Guinea, we have one of the most interesting and beautiful regions imaginable. The bay runs back from a wide mouth, its sides closing in after we have gone perhaps a mile and a half. In this constricted part the view into the inner bay is almost completely cut off by the little wooded islet of Metu Debi. On the innermost sheet of water, called the Jotefa Bay, are several villages, as there are also on two arms leading from the outer bay.

These little towns are all most picturesque, as the photograph taken of Kajo shows. When it was taken the water looked so blue and the beaches so white, from the top of a hill near the mouth of the bay, that it seemed almost as if it were the glimpse of another world. Way below, near the shore, a rough crowd of Papuans were talking over the steam launch which had carried us in here. In the boat it had been smoky and frightfully hot, while the crowd that waited for us was indeed a noisy one.

Men of all ages shrieked and yelled and hopped up and down in their frantic efforts to give vent to their excitement—men as naked as when they were born and who had evidently refrained from bathing for a long time. Many objects interested them, and most naturally. Cameras were a source of deep curiosity, as were butterfly nets and killing bot-

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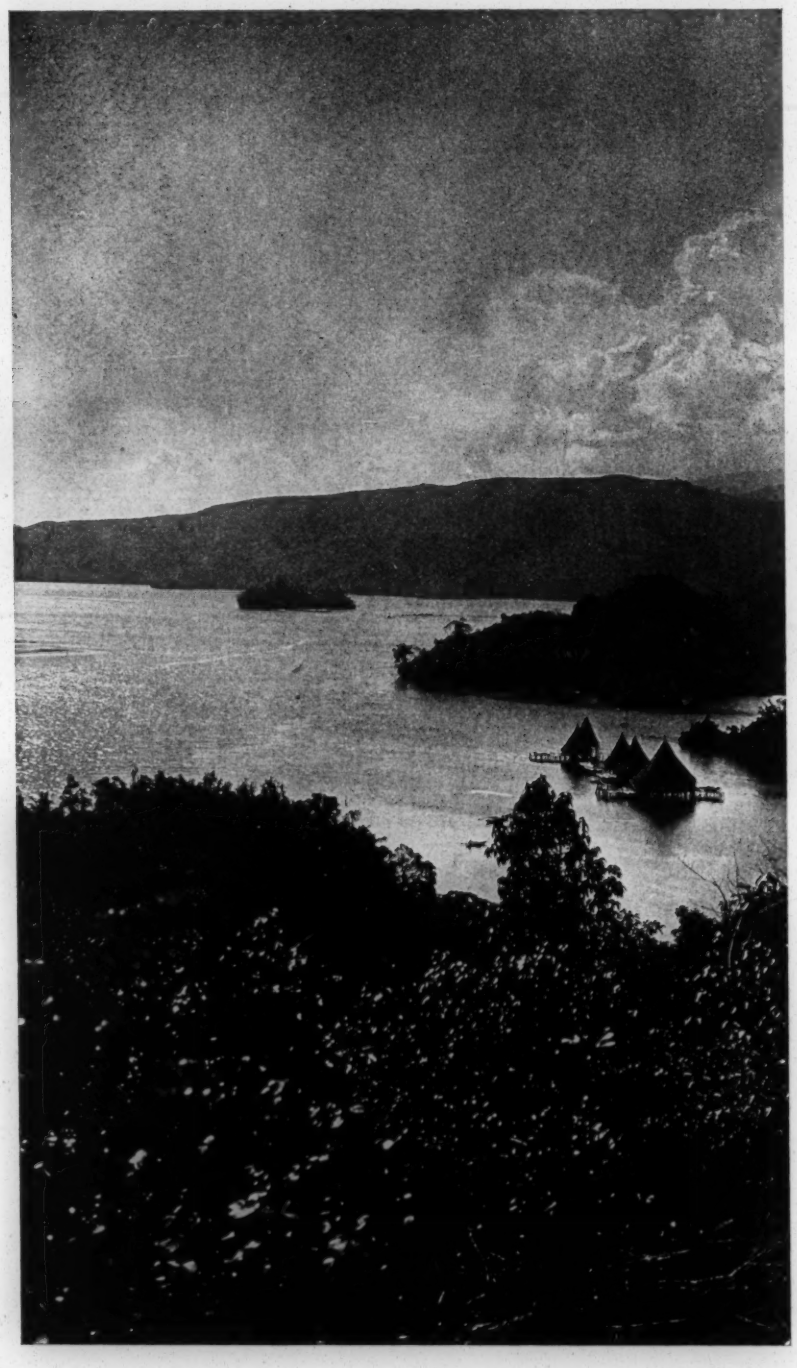


AN EARLY MORNING VIEW OF THE VILLAGE OF KAJO, IN HUMBOLDT BAY

The colors of the water here surpassed anything in the West Indies or the Mediterranean. Some of the hills and distant mountains were heavily wooded; some great stretches were covered with "alang-alang," a tall grass of beautiful pale green. The contrasts of color were almost as beautiful on shore as in the water.

tles; but the most remarkable of all, to these and many others of the people, was their first sight of a white woman. That was indeed the event which will live the longest in the local traditional history.

The villages are set on poles and the houses are arranged to form irregular streets. The various pictures tell better than words how pretty these little groups of curiously shaped dwellings are. All the towns are picturesque, but the palm is held by Tobadi, the largest town in the basin, and one which contains probably as fine an example of what the savage architect can do, when impelled by religious motives, as exists. In speaking of these religious structures I will call them "temples." The word "Karriwarri," which is generally applied to them, probably means the building, but it may mean the spirit which is worshiped in it.

In various localities we had seen the small square houses which serve as sacred buildings in the Geelvink Bay country. These, however, are mostly used as "bachelor houses," where the unmarried men sleep while they are learning the net-making and basket-weaving and other things which every grown Papuan must know. These houses are neither beautiful nor especially interesting.

In Djamna, however, we walk back into the woods and a most astonishing structure stands before us. The general shape of this building is very similar to that of a house such as is regularly built in Djamna, but the ends are wonderfully decorated. Each is composed of hewn boards set up side by side and on each of these is a design running from bottom to top.

The native artistic ingenuity of this folk is very well shown when we find that no two boards on either end of the building have the same design. The work is done by smearing with mineral pigments and the effect is singularly grotesque. The carvings of the entrance ladder on one end and of many of the supporting posts is as obscene as can be.

A small square hole gives entrance to a large dark room in which is little in the way of furniture, merely a few places on the floor where clay has been laid down for fire-making.

About the wall are piles of objects which can hardly be distinguished in the dim light.

Soon a man steps up and takes hold of something, and we see that he has one of the curious hour-glass shaped drums, for drums are sacred and are kept in here along with the great flutes. These are very long and very difficult to blow and are usually only heard at night, a heavy mysterious roaring.

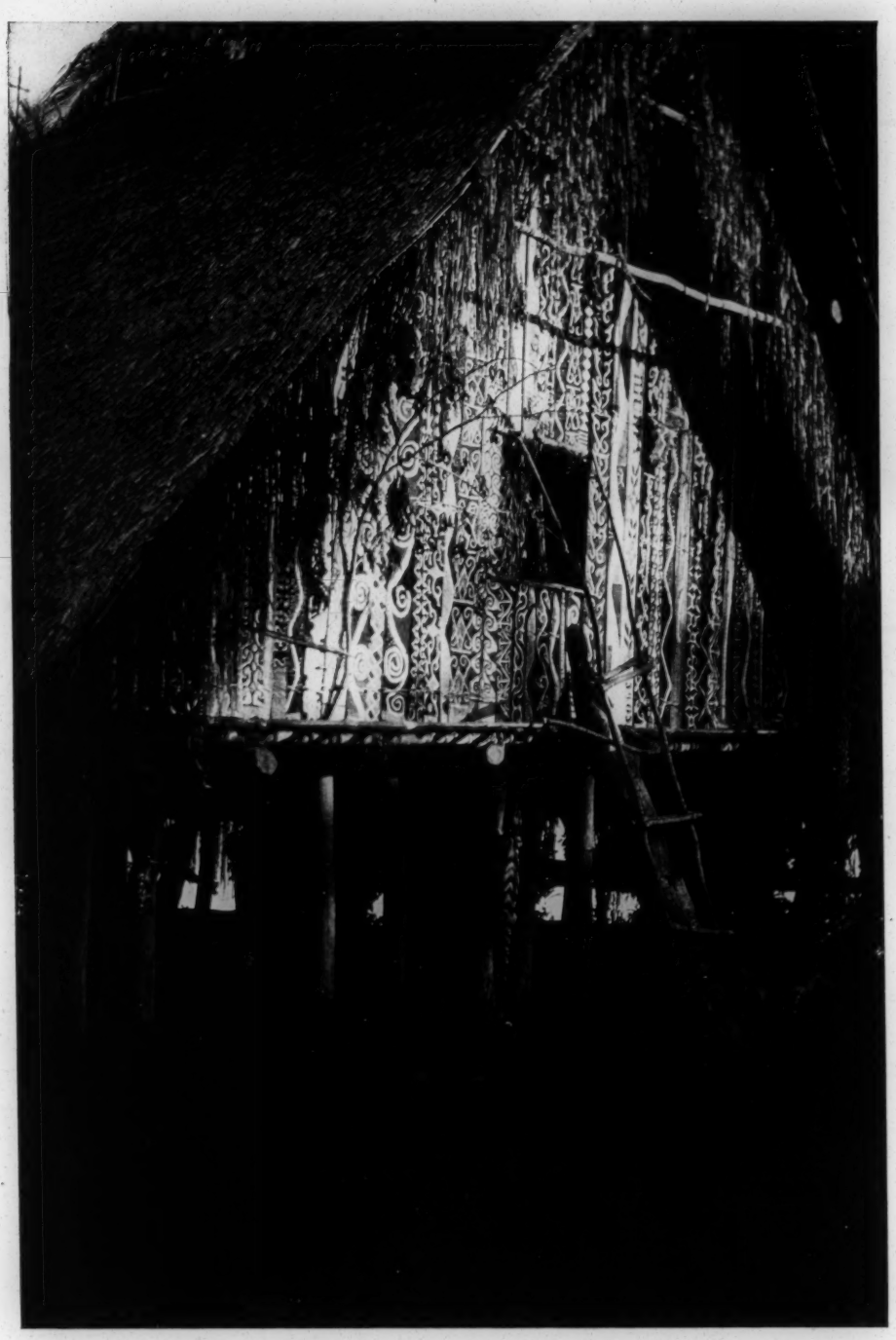
Two men each take one of the instruments and stand opposite each other; they blow into the end of the bamboo, and the length runs out so far that each man straddles his partner's flute. In blowing, the body is swayed from side to side in the straining effort to exhale as strongly as possible.

The noise produced is like no other sound and to the Papuan it is sacred. The flutes play some part in the initiation ceremonies, but here our knowledge ends, for so far no one has successfully delved into the many secrets which go to form the religion of this people. They are reticent in giving information as to any of their rites.

One thing we soon learn, no woman ever comes near a "temple," and every article in it is forbidden to her to either see or touch. The people say that should a woman see, for instance, a sacred flute, she would sicken and die in less than two days. Entrance into a temple would be punishable with instant death; but such a thing would never enter a native woman's head.

At first the "korano," or head man, and the warriors refused absolutely to let Mrs Barbour even look in; but finally, after much talking and many presents, they consented, and she entered, the first and only woman who was ever in the Djamna "temple" or who has ever seen the playing of the holy flutes.

Now the "temple" at Tobadi is quite unlike any of the others—as unlike as is the house type of this village from that in Geelvink Bay. Here the temple is for sacred purposes only and the boys and

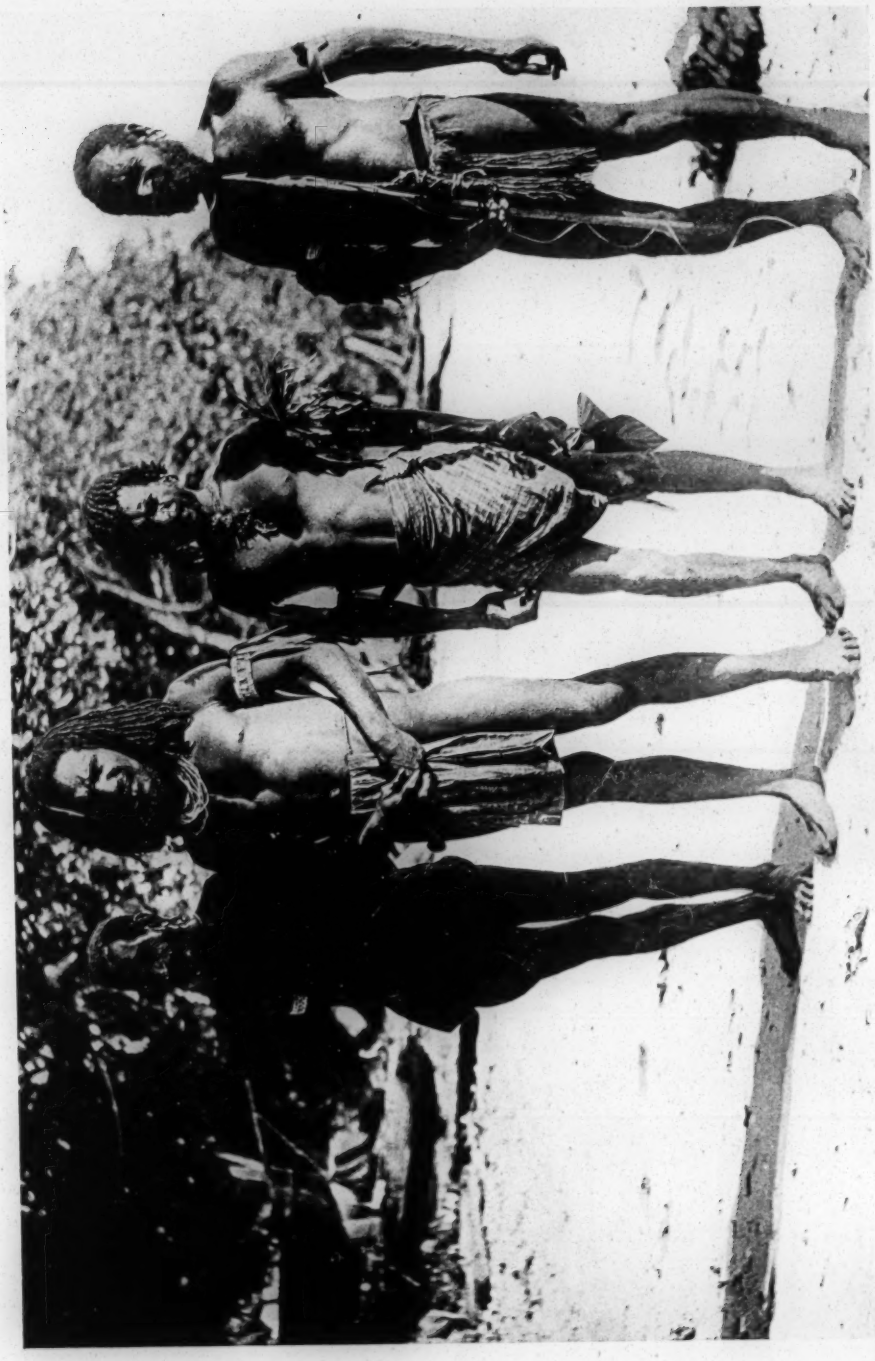


THE "KARRIWARRI" OR SACRED HOUSE AT DJAMNA

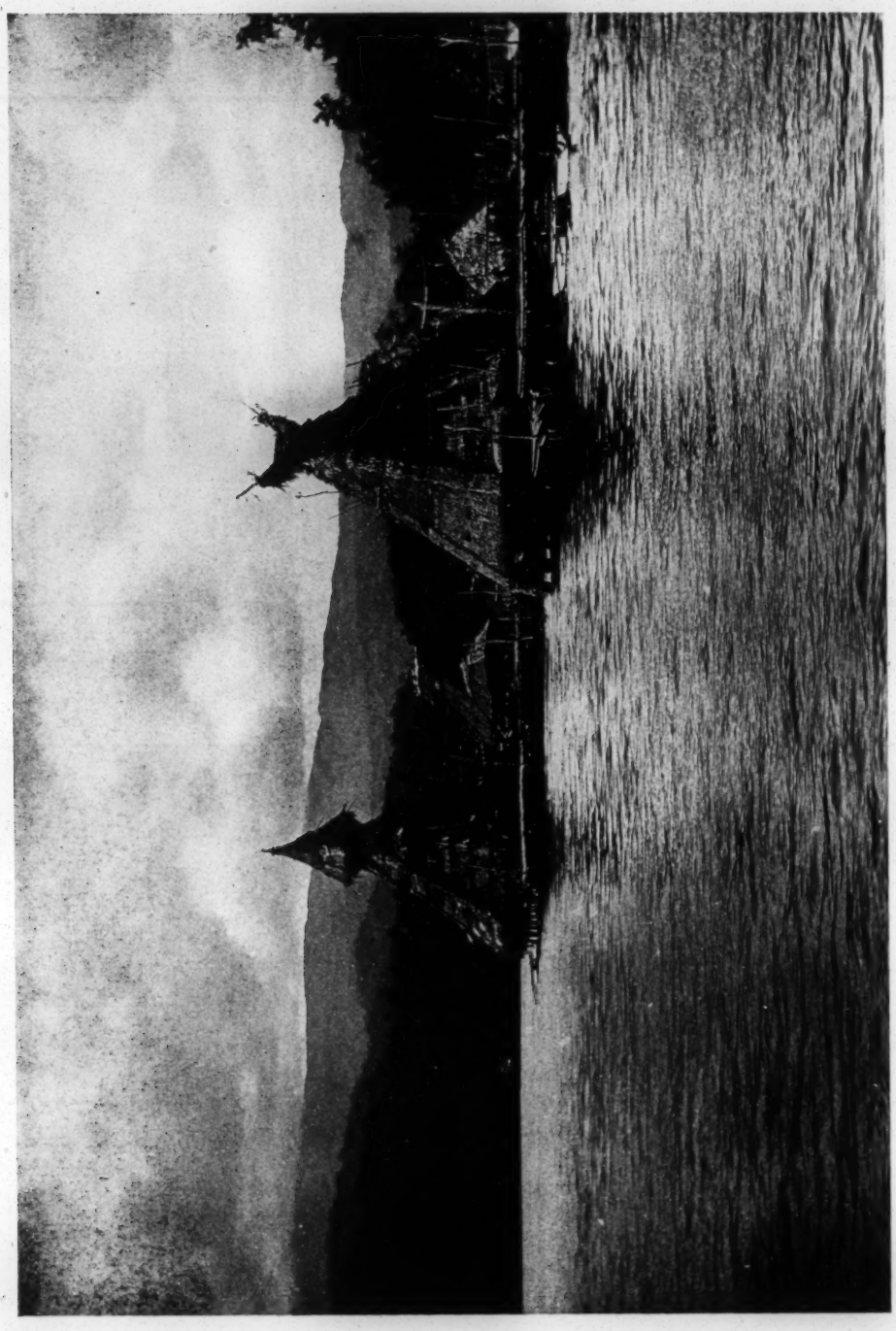
The decorating is intricate and very varied. There is no means of lighting the house from without nor ventilating it. The square door with its curtain of grass is the only entrance or exit. The carved crocodile crawling up one of the supporting posts is a regular mark used to designate a sacred structure.

A MAN OF DJAMNA STANDING BY THE BOW OF HIS CANOE

The hair is worked up with clay so as to lie protecting the back of the neck from the sudden attack of a head-hunting neighbor. Note the difference in physiognomy of this man from the other Papuan types.



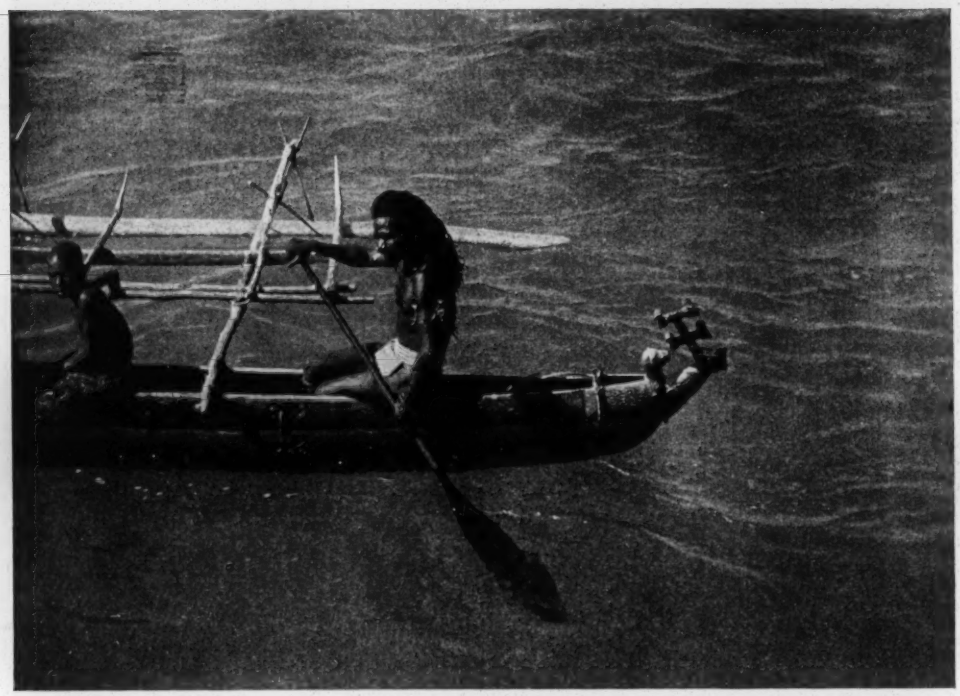
MEN OF DJÀMNA ISLAND



THE SACRED STRUCTURES OF TOBADI, HUMBOLDT BAY

In the background are many low hills, most of which have never yet been trodden by a white man's foot

THE GREAT "KARRIWARRI" AT THE VILLAGE OF TOBADI, IN HUMBOLDT BAY
Next to it may be seen the decorated shed where the elders of the tribe meet in council



SCENE IN HUMBOLDT BAY

young men on probation, so to speak, sleep in a building near by. They have free access to the "temple," and work at ropemaking and net-weaving behind a screen of palm leaves, where they are hidden from the gaze of any woman.

The building itself, which looks as if it were made of three cones set one upon the other by some Titan's hand, is of great sanctity. The people here, who are as rough and noisy a set of savages as exist, become quite subdued when they enter it, and their voices fall to whispers as they converse. When we tried here, several times, to persuade the crowd to admit Mrs Barbour, a single gesture gave a final answer; that gesture was the swift passing of the hand across the throat.

Happily during our stay on the coast no case of death among the natives was witnessed. The Papuans do not believe in the occurrence of natural death, and it is quite impossible to tell who will be blamed by them for the causing of death by evil influences. Raids and bloodshed often arise from such causes, and many strange practices are used to discover the guilty party.

In many localities the body of the deceased is slowly dried over a fire and the drippings are saved. These must be tasted by any stranger coming to the house, and should vomiting ensue, the party is considered guilty, as the cause of death. In other places this liquor is partaken of by the widow of the dead man as an evidence of her fidelity to him.

After desiccation has taken place the body is generally bent to a sitting posture and, after it has been wrapped in a mat, is hung up among the rafters of the house.

The above leads naturally to the mention of a few other modes for the disposal of the dead. In Humboldt Bay they are simply laid out on a small island and left untouched. In other places they are buried in the ground, in a sitting position, and a fence is built about the grave, within which are deposited various arti-

MEN OF TOBADI VILLAGE, HUMBOLDT BAY

Fond of ornaments, they wear boars' tusks in their noses, feathers in their hair, and in their ears almost anything. The boys, who are not yet full members of the tribe, have their hair cut as the picture shows. This is done by scraping the head with a splinter of shell from the giant clam (*Tridacna*). It is indeed a bloody operation.

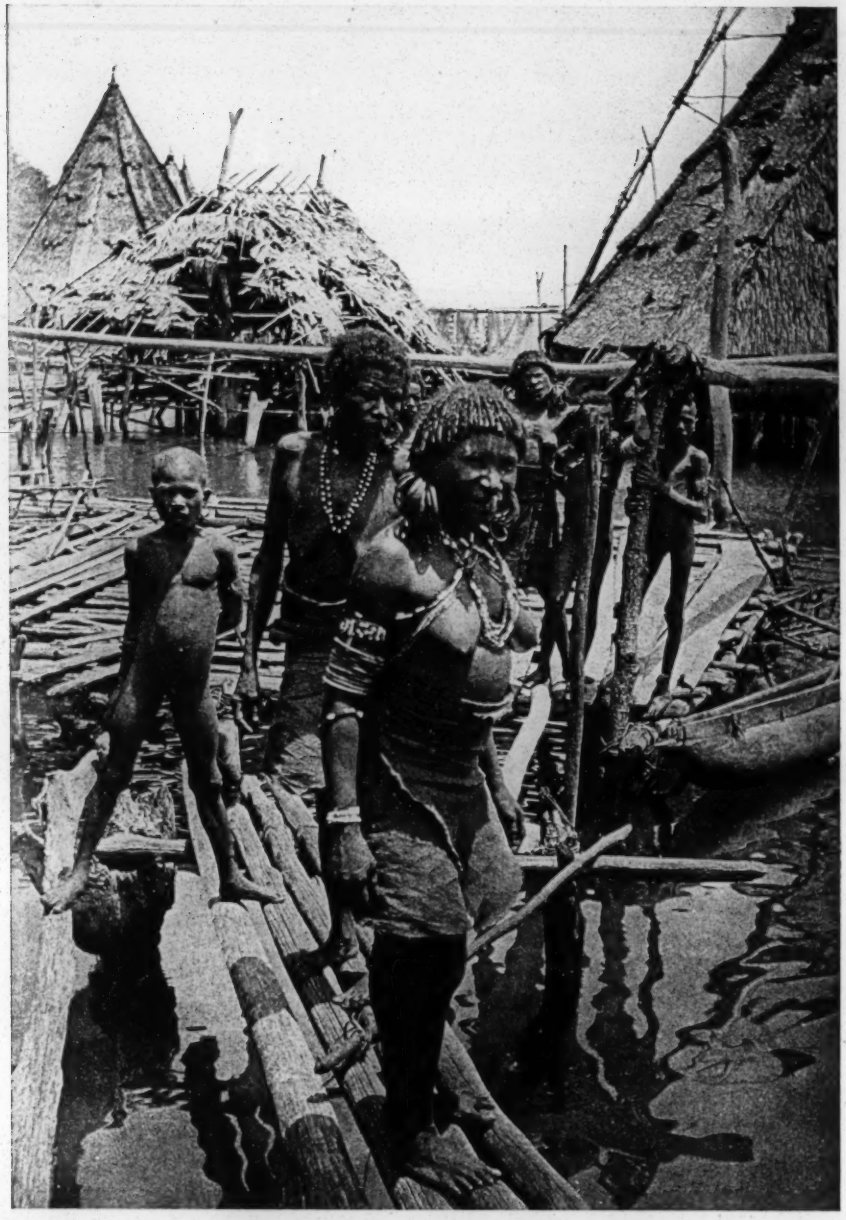
TRADING WITH THE NATIVES: HUMBOLDT BAY

PAPUANS FERRYING THE WRITER FROM TOBADI VILLAGE TO METU DEBI ISLAND, IN HUMBOLDT BAY

The man in the right-hand corner was one of our Malay servants and not a native of New Guinea

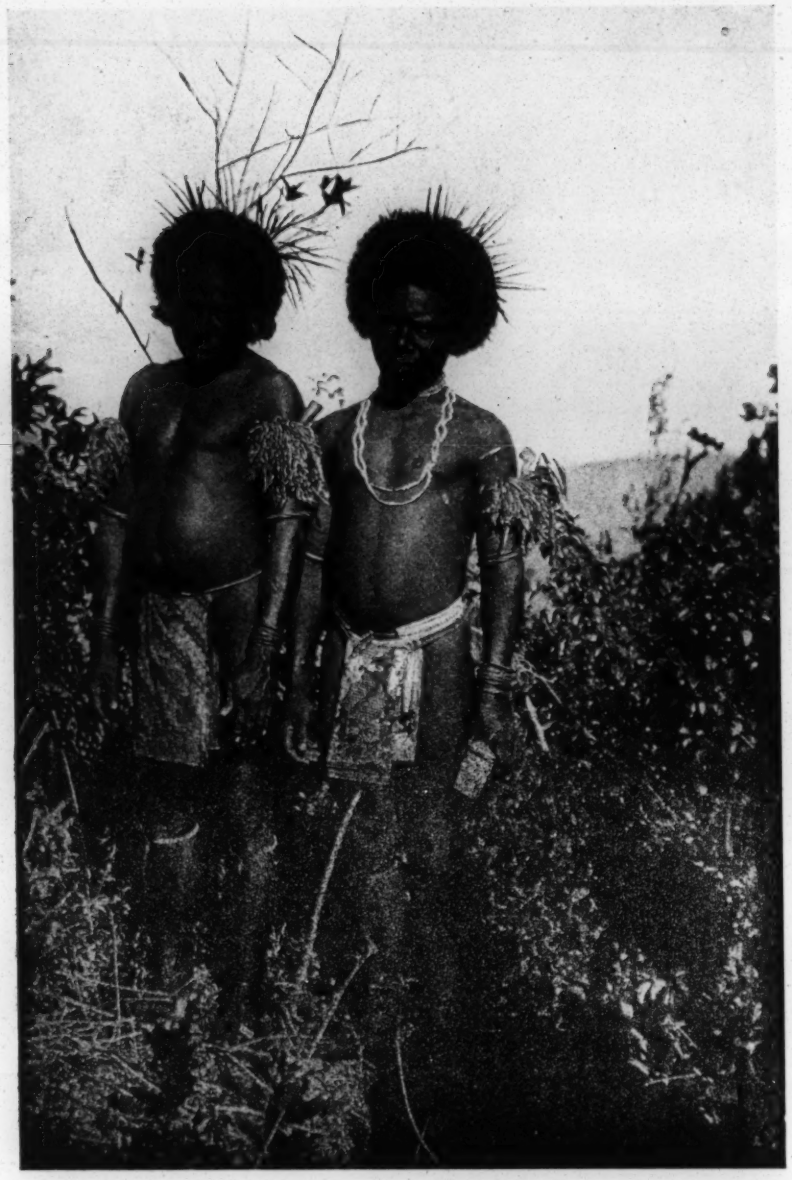
WOMEN GOING CALLING ALONG A VILLAGE STREET OF TOBADI

They are not allowed to use canoes with outriggers, as they might try to escape. No canoe without an outrigger could leave the sheltered bay without capsizing. The men frequently get their wives by raiding neighboring villages. The women consequently would run away if they got a chance.



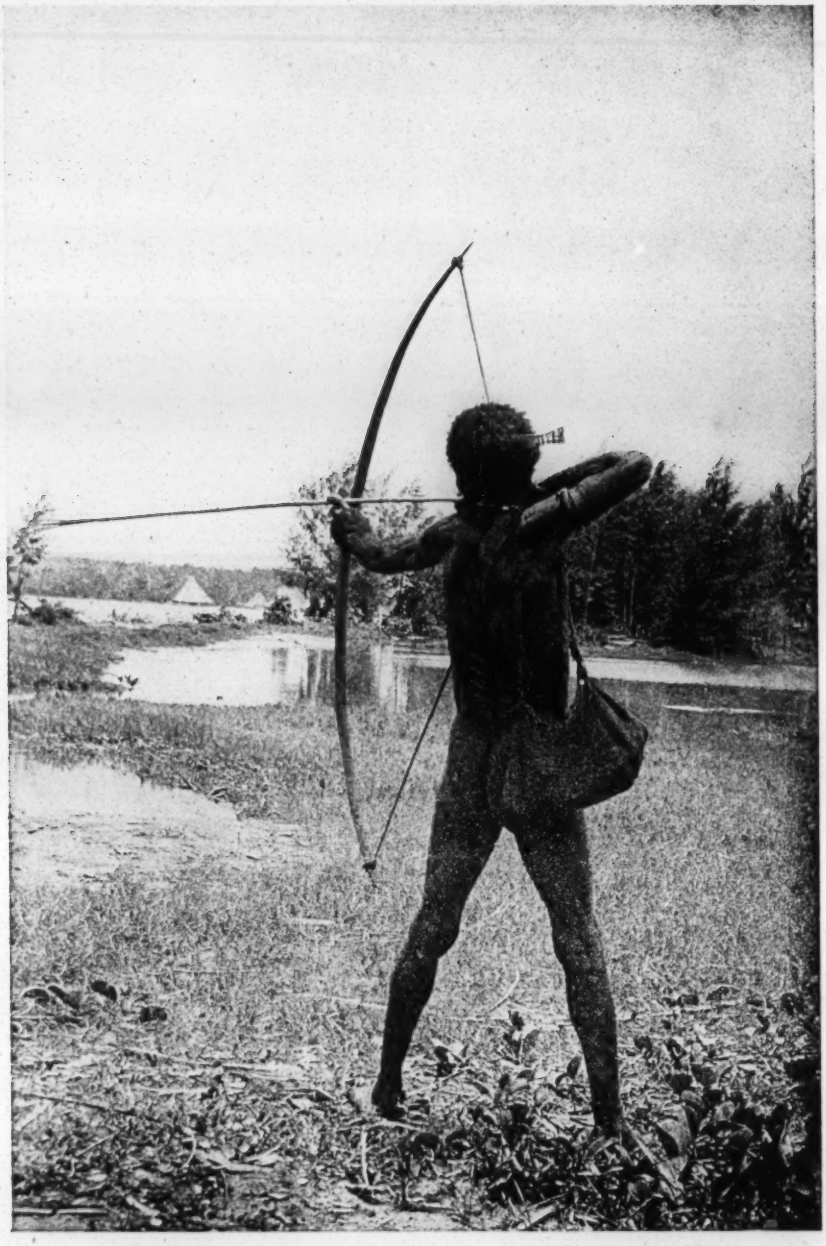
A VILLAGE STREET IN TOBADI, HUMBOLDT BAY

The women roll their curls with mud and wear many earrings



PAPUAN GUIDES

These two men were guides when I climbed a high hill to take some views of Humboldt Bay. Before we had gone far I gave them enough tobacco to buy the daggers, made of human thigh bones, which they carried in their arm bands. I followed them with more comfort when I felt these daggers rattling in my own pocket. The men's hair is decorated with blades of grass and orchids.



AN ARCHER AT HUMBOLDT BAY, USING A FISH ARROW

The people here usually wear no clothing at all

THE VERY RARE PROECHIDNA, OR EGG-LAYING ANT-EATER: PHOTOGRAPHED ALIVE PROBABLY FOR THE FIRST TIME

cles which the deceased prized. In some cases they are placed in little houses set above the ground on short posts. These do not last long, on account of the inroads of hogs.

In some cases dead children are reduced to skeletons and these are placed in hollow bamboos.

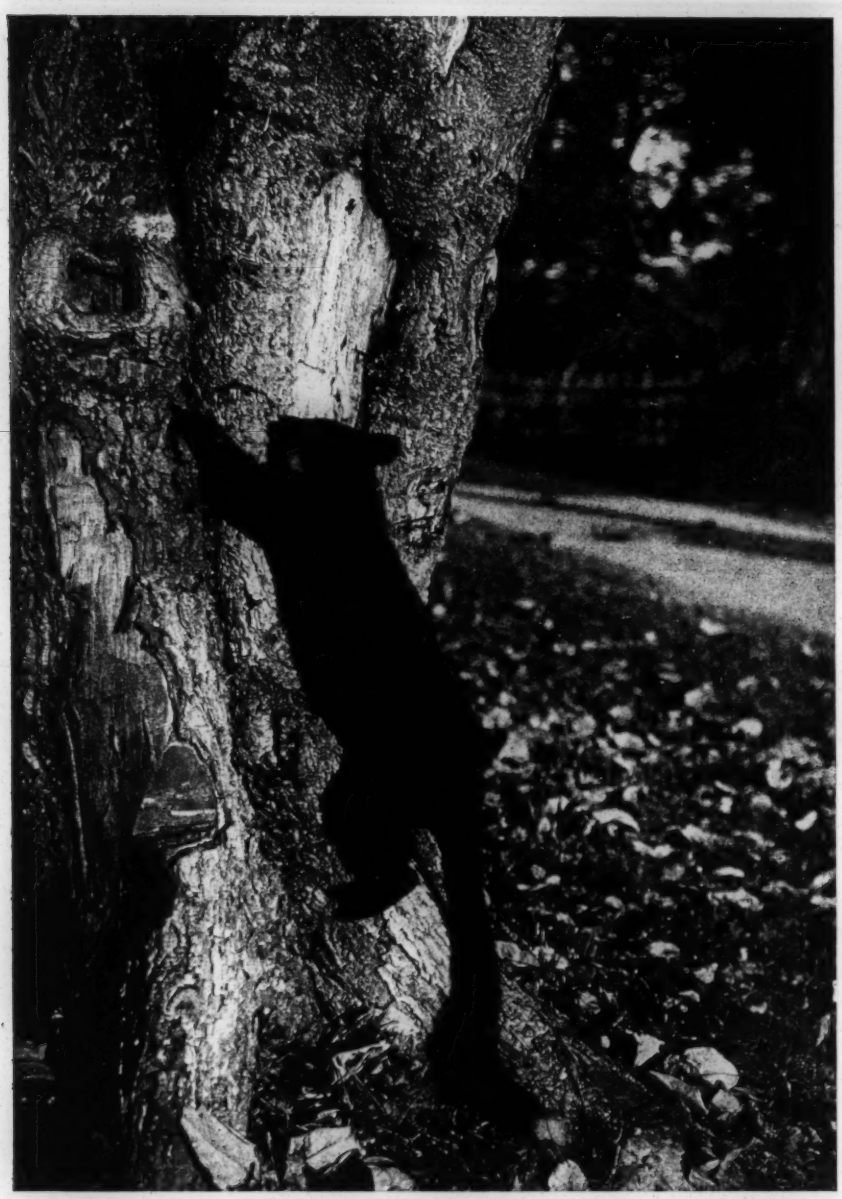
In the Geelvink Bay region the skull is frequently removed and placed within a large wooden head which is carved from a block of wood. This is considered very sacred, and it is almost always impossible to persuade the people to part with one.

In British and German Papua the custom of wearing part of the skeleton as an amulet is reported. This is unknown in the regions called *Papua Talandjang* (The Land of Naked Papuans) by the Malays. It may be said that this region embraces Humboldt Bay and the neighboring country toward Cape D'Urville. We find, however, in Jendee, on Roon Island, in Geelvink Bay, this custom cropping up again. Here the mother often wears some of the bones of her dead child as a necklace.

The government of the people is simple in the extreme. There is often a chief, but in general affairs are decided upon by the men met in assembly. At Tobadi the assembly house is seen next to the great "temple." In some localities these houses serve some sacred purpose, and the characteristic crocodile is part of the scheme of decorative carving. In Geelvink Bay, on the other hand, no houses exist for this special purpose. The men meet regularly on the front piazzas of the great communal houses and discuss matters there.

Agriculture, of course, has made but slight headway. Sago is here, as in many of the Moluccas, the great main stay of the people. Sago palms grow in great numbers along all the low-lying coastal plains.

Sago is prepared in the usual manner. The tree is cut down and the trunk opened. Then the pith is beaten to loosen it and to render the subsequent washing more effective. This beating is done in the Geelvink Bay region with a heavy wooden club. About Humboldt Bay, however, a curious hammer-like tool



A PAPUAN TREE KANGAROO CLIMBING (DENDROLAGUS URSINUS): FOUND ONLY IN THE FORESTS OF NEW GUINEA

A CASSOWARY AT SORONG, NEW GUINEA

The young birds are driven into nets stretched in the woods; then they are kept tame near the village until a feast time. They provide food, feather ornaments, hair combs, bone daggers, and arrow-points of bone splinters and toe nails.

is used, the head of which is made from the same stone as are the stone adzes, only instead of being axe-like in shape they are round, with a hollow in the front face, leaving a rather sharp rim.

After the pulp is well beaten, water is run into the now well-hollowed trunk. This water is generally obtained by using other old tree trunks as leaders and turning in a small brook. The flow after passing the pulp, which is agitated by hand, is generally run into a large canoe. Here the starchy matter settles, and when the water is drawn off this is packed into a receptacle of woven palm leaves. The whole affair hardens and will keep thus, while dry, almost indefinitely.

Wallace gives an illuminating account of how easily a deal of this food may be obtained. He says: "It is truly an extraordinary sight to witness a whole tree trunk, perhaps twenty feet long and four or five feet in circumference, converted into food with so little labor and preparation. A good-sized tree will produce thirty tomans, or bundles, of thirty pounds each, and each toman will make sixty cakes of three to the pound. Two of these cakes are as much as a man can eat at one meal and five are considered a full day's allowance; so that, reckoning a tree to produce 1,800 cakes weighing 600 pounds, it will supply a man with food for a whole year. The labor to produce this is very moderate. Two men will finish a tree in five days, and two women will bake the whole into cakes in five days more; but the raw sago will keep well and can be baked as wanted, so that we may estimate that in ten days a man may produce food for the whole year."

These people do not by any means live on sago alone. Fish, flesh of pigs, kangaroo, opossums, and of cassowary and other birds vary the monotony. The fish

may be speared, shot with arrows—a feat at which the Papuan is truly an adept—or taken with net or trap. The pigs are hunted and speared or the young are captured and brought up in the village. It is by no means uncommon to see a Papuan woman nurse a young pig.

The young cassowaries are raised and wander about freely in some places. When the old birds are hunted, the people are very cautious in approaching them, for the kick of a big bird will do more harm than a wild boar can do with his tusks. Opossums and birds, especially the Goura, or great crowned pigeon, are shot with specially made, small, light arrows. These are also used in obtaining the birds of Paradise.

The notes of this and the preceding paper give in bare outline form some of our observations. The land is beautiful, the people are interesting, but far be it from me to paint the region as one suitable for any to visit except the naturalist or ethnologist. He expects insect pests, fever, heavy damp heat, an often most inhospitable reception ashore, and almost every other discomfort imaginable. These he will find in abundance.

There is still grave danger from the natives in many localities, and the coast region is one of the most unhealthy for white men in the world.

Curious to relate, our Javanese bird-skinners suffered more from fever than did we. Our head collector, Bandoung by name, reached Java barely alive, and for long his life was despaired of. I have heard since that he was recovering slowly. One poor boy from the island of Ternate, a garden spot in the Moluccas, lies buried near the beach at Manokwari.

Our thanks are due to many for assistance, especially to the officers of the little *S. S. Both,* to many officials in the government service, and to Mr Sedee, a merchant of Ternate. He has made several trading trips to Papua and his knowledge of local customs and of the Ansus dialect was always most courteously at our disposal.

LEAVING NEW GUINEA

Malay traders from the ship and Papuans in double and single outrigger canoes

THE PACIFIC: THE MOST EXPLORED AND LEAST KNOWN REGION OF THE GLOBE*

The Organization of the Pacific Scientific Institution at Honolulu

By Leopold G. Blackman

Principal of Allüolani College, Honolulu

AMONG the most important of the great undertakings yet to be accomplished by the modern investigator is a complete scientific exploration of the Pacific Ocean. Although some centuries have elapsed since the first adventurers of western Europe tempted the dangers of this vast region, the Pacific offers today the largest area on the globe for scientific investigation and locks within its mighty shores information the acquisition of which would be of more benefit to modern knowledge than that to be derived from the prosecution of any similar undertaking.

Foremost among the great benefactors of our race have been numbered many naturalists, and the names of Darwin, of Wallace, and of Dana will always be associated with those who have contributed much to the sum of modern knowledge. The researches of such workers have immeasurably extended the horizon of human intelligence and have helped our race to break away from the narrow confines and set formulas of ancient habits of thought.

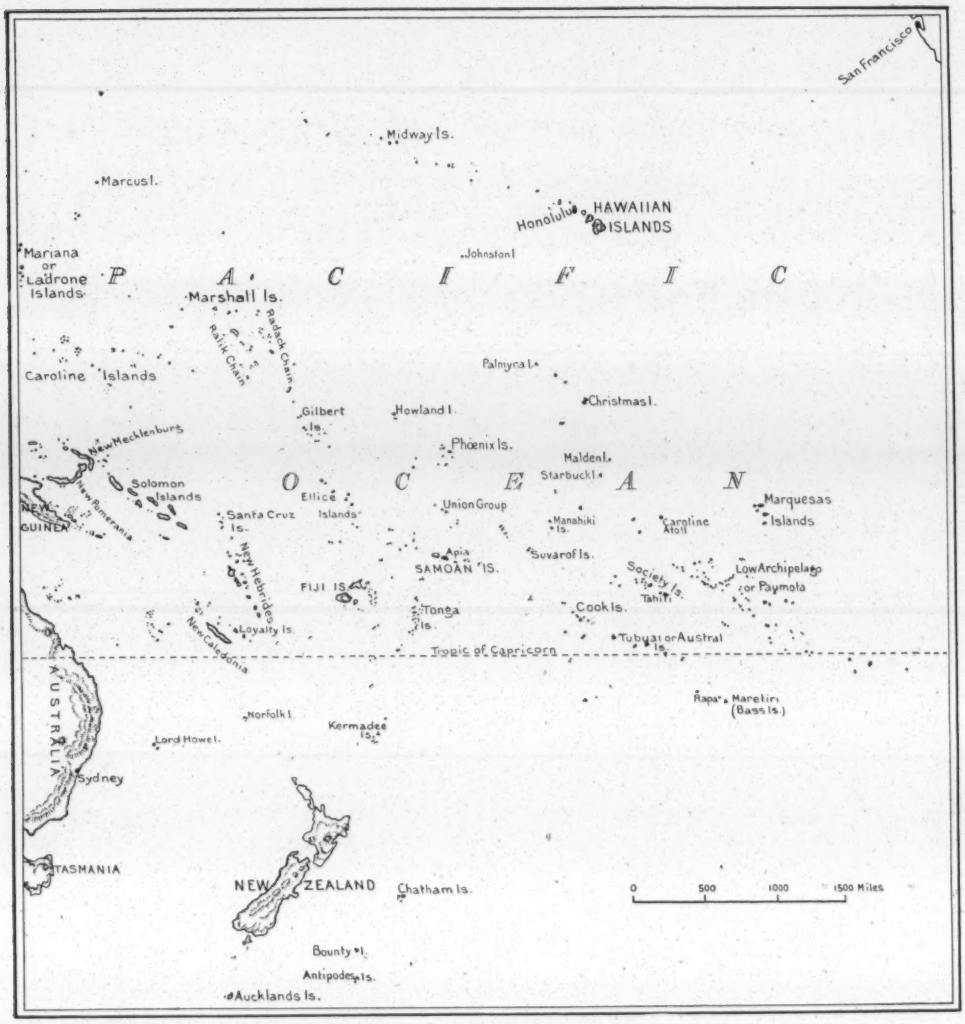
The investigations of these great men were conducted in this same ocean region to which the attention of the scientific world is now being turned. Important as was the result of their achievements, it has only made us vaguely acquainted with the extent of the work yet to be accomplished and of the perplexing questions to which modern learning demands answer. The scientific exploration of the Pacific is fraught with so much importance that it will immortalize alike the patrons whose beneficence shall make its prosecution possible and the workers who shall bring it to a successful issue.

From the time the first hardy mariners of the old world entered the Pacific, expeditions innumerable have visited this immense ocean. In the early days of its history the vessels of Holland and Portugal entered from the west and strove for possession of the coveted Spice Islands; the keels of Spain ventured from the east in pursuit of the elusive gold, of which they were to find none, and have left only the empty name of Islands of Solomon to recall to us their vain hope; the English adventurer haunted its wastes to prey upon the weighted treasure-ships from Mexico laden with Spanish gold.

EARLY GOVERNMENT EXPLORATIONS

In less remote times came the early period of government expeditions to the Pacific. Of these, the English were foremost in enterprise and in the results which were achieved, although the French, Spanish, German, and Russian governments also did good work. The tragic fate which has befallen so many Pacific explorers is proverbial and has spread an atmosphere of mystery and romance over the story of adventure and discovery in this part of the world. Cook, Magellan, Mendaña, and La Perouse are but a few of the illustrious roll of voyagers whose lives have been sacrificed in their endeavor to solve the mysteries of the Pacific. The narratives of the early Pacific explorers afforded a wealth of eagerly sought literature,

* The author is indebted to the U. S. Bureau of Fisheries for a number of the illustrations accompanying this article.



SKETCH MAP OF THE PACIFIC ISLANDS

whose influence has to this day tinctured the writings of the historian and novelist of this wonderful region.

In still later years the United States government has interested itself actively in various Pacific investigations and has added considerably to the oceanography of the region.

The whaling industry also carried its toilers into many remote parts of the great ocean and left an indelible impression upon the native population.

To these legitimate enterprises are to be added the incursion of a host of piratical and predatory exploiters, who have preyed upon commerce, pillaged and kidnapped the native races, and made the white man an object of hatred throughout the regions in which their nefarious work was carried on.

THE MORE FEROCIOUS ISLANDERS AVOIDED

In spite of these activities of the white man, whether of good or evil repute, the

NATIVE ASSEMBLY HOUSE: BORA, SOCIETY ISLANDS

The early Pacific explorers found such structures on many islands; great native gatherings were held in them

Pacific Ocean remains today the most *explored* but the least *known* extensive region of the globe.

After the days of early exploration the interest of the white man centered chiefly around those Pacific archipelagoes which were either situated on convenient commercial routes or where the friendly disposition of the natives invited the newcomer to sojourn among them. This quality of racial disposition has been very instrumental in determining the development of certain island groups and accounts in part for the fact that among the various archipelagoes, these inhabited by the Polynesian race have been the great centers for the white man and have therefore departed from primitive standards most. In many cases the reputation of ferocity and cannibalism of islands inhabited by Papuans and other races hostile to strangers has warded off the tide of civilization for many generations and left the island continent of New Guinea and such archipelagoes as the Solomon Islands to this day very much in a condition of primitive savagery.

In order to place before scientists the record of the Pacific which yet remains, there has recently been inaugurated at Honolulu, Hawaii, the Pacific Scientific Institution, whose object is to stimulate public interest in the great work of Pacific exploration and to take definite steps toward its accomplishment.

The main object of the institution is to promote and carry out a complete scientific exploration of the Pacific Ocean realm. The chief interest will largely group itself around ethnology—that is, around subjects affecting the races of mankind which inhabit the ocean archipelagoes.

More theories have probably been propounded and dogmatically asserted concerning the origin of the Pacific islanders than of any other race of man.

The study of this important question will not only seek to determine the mode

of entry of man into the Pacific—for it is agreed that the inhabitants of this region could not have evolved there, but must have entered it as emigrants, whether voluntary or involuntary, from some other branch of the human stock—but the inquiry will no doubt throw much illumination upon the evolution of the human race itself.

THREE DISTINCT RACES

Much valuable material will also be collected to assist in a better understanding of the growth of our own civilization from elemental savagery, for it is reasonable to suppose that the primitive wants of man in different ages and regions have called forth similar expedients to satisfy them.

Other important objects of investigations for the ethnologist will touch the various racial types in which the Pacific islanders are divided. Of these, three are generally recognized, of whom the Papuans and Polynesians appear to show the widest divergences, with the Micronesians occupying the intermediate ground and possessing affinities of race, language, and custom within the other two. Eliminating the Micronesians from the question for the moment, the presence of two distinct races of man in the Pacific suggests two periods and sources of immigration and adds difficulty to an already perplexing question, for the demarkation between the divisions of the races is by no means well defined, but is complicated by the admixture of many other races of both oriental and occidental origin.

The Papuans may be generally said to inhabit New Guinea, the Solomons, New Caledonia, Australia, and Fiji. Their most obvious characteristics may be briefly summed up by stating that they are irreligious, democratic, quarrelsome, cannibalistic, and hostile to strangers. They possess no hereditary chiefs, paint or scar the body rather than wear clothes, cook in earthen pots, chew betel, and their speech is broken up into a number of apparently irreconcilable dialects. The Papuans are the least attractive of any Pacific islanders, and the island groups which they occupy are among the least known of the Pacific and have been for many generations shunned by mariners and associated with everything that is of evil repute in the record of the ocean.

The Polynesians in many attributes are greatly at variance with the Papuan islanders. They possess, generally speaking, an elaborate religious system, an established order of hereditary chiefs and well-defined social castes. They are friendly to strangers, fond of dress, expert manufacturers of Kapa cloth, and intrepid seamen and navigators. They tattoo instead of scar the body, seldom practice cannibalism, cook in earthen ovens instead of in earthen pots, drink awa, and possess a common language understandable throughout New Zealand, Hawaii, Samoa, Tahiti, and the Paumotu Islands.

Of all the Pacific races the greatest interest attaches to the Polynesian islanders, but it is unfortunately these people whose primitive customs and racial types have been most broken up by modern intercourse. The study of the Polynesian language will afford a most fascinating field of inquiry, and its proper investigation will require a knowledge of the tongues of the people inhabiting the region between the eastern coast of Africa and the western coast of South America.

The Malayo-Polynesian language possesses the distinction of being spoken by indigenes over the widest area of any language of the world, for it embraces two great oceans and extends from the island continent of Madagascar to the isolated islet of Rapanui. This latter insignificant output of Polynesian culture is distinguished as affording specimens of that remarkable ideographic writing which lifts the race well above the plane of savages and proves it to have advanced toward a culture worthy of comparison with primitive civilization. The deciphering of the Rapanui records has not yet been accomplished, but its solution should be achieved when all speci-

MABU, A VILLAGE IN THE FIJI ISLANDS

mens of the art have been assembled for comparison. The translation of their writing will perhaps unlock knowledge of immense value to many questions of the origin, migration, and history of the Pacific races.

DID THE MOON COME OUT OF THE PACIFIC OCEAN

Of not less importance will be an investigation affecting the origin of the Pacific Ocean bed itself—the greatest depression on the globe. Many ingenious theories have been advanced on this subject, and among these the two following are interesting:

The first hypothesis suggests that the Pacific area was formerly occupied by a land-mass which has subsided below sea-level, probably by volcanic agency. The volcanic system extending round the Pacific littoral of Asia and America lends considerable color to the theory, and would represent the edge of the sunken plain. At this point of fracture the subjacent molten contents of the earth have found vent, and thus by dispersal have built up the coast mountain chains. If this be true, the present island groups of the Pacific would represent the summits of former mountain systems.

Whatever the cause of the isolation of the present archipelagoes, evidences are not lacking that they have at some time been connected with other land-masses. The absence of mammals of any importance, however, would suggest this period to be so remote that the severance occurred before the evolution of these creatures. The land mollusks, whose nearest affinities must be sought in geologic fossils, also point to the islands as having been isolated in the remote past.

The second geological theory of the Pacific which has claimed credence is that the land-mass which formerly occupied its depression was, in the age before the solidification of the globe was too far advanced, whirled off by centrifugal force, and now composes our satellite, the moon. A comparison of the shores of west America and east Asia with other evidence suggests some truth to this remarkable theory, for the coast lines will be seen to bear the same relation to one another as that possessed by the indentures of a legal document.

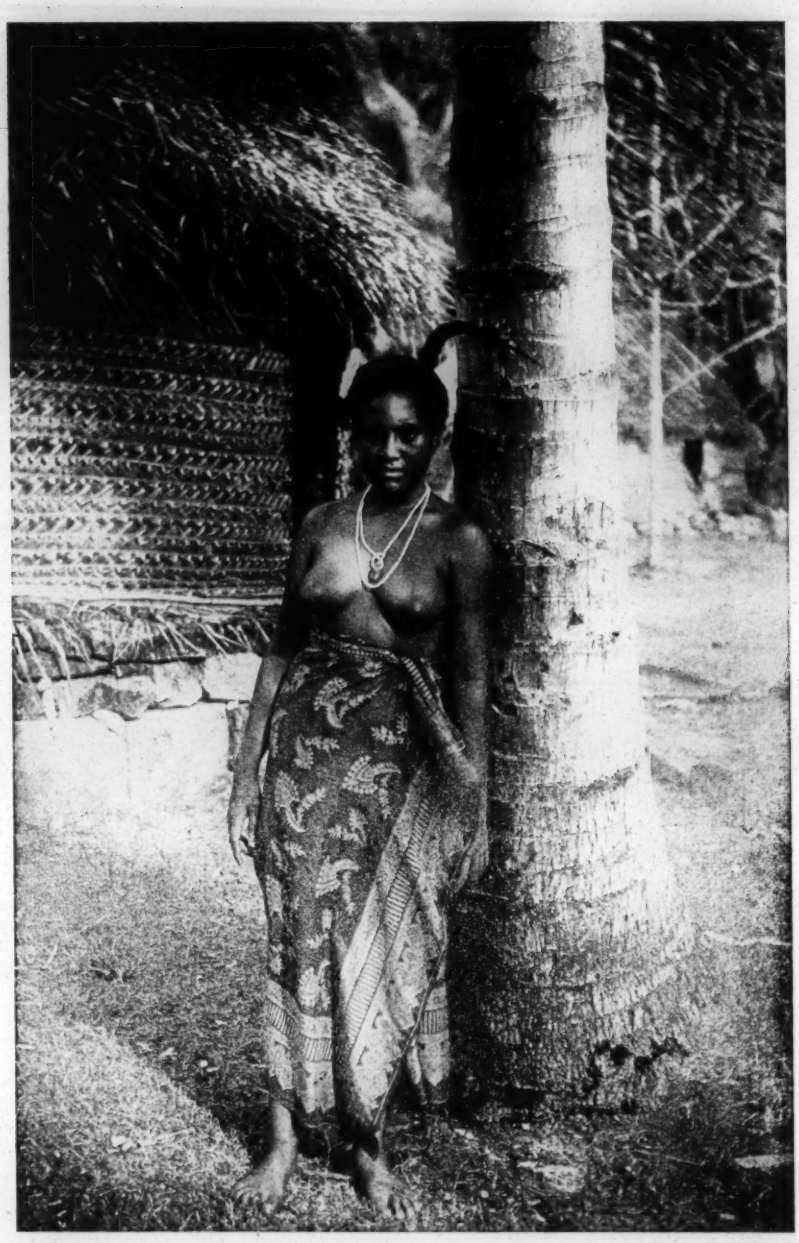
Why do Pacific mammals, reptiles, and birds become more scarce as we progress across the ocean from east to west? What is the origin of the Hawaiian birds? How did the flightless birds of New Zealand originate, and what was the evolution of the gigantic wingless moa? Why is the nearest living relative to the extinct dodo found in Samoa? What is the import of the presence of the same species of a fresh-water fish in two rivers situated on opposite sides of the Pacific? Have the Australian marsupials a common origin with those of America, and does their presence contribute to the theory of an intervening continent? These are a few of the many interesting questions whose solution would contribute much to the establishment of truths of material importance to modern knowledge.

The investigation of all the above questions, except perhaps those affecting such stable subjects as geology, must be undertaken in the immediate future if any satisfactory result is to be achieved.

The total disappearance of the inhabitants of some islands has created a gap which is now as impossible to bridge as that between our own civilization and the European Stone Age. In this way much that is necessary to a true understanding of the Pacific has forever disappeared, and many perplexing problems can now never be solved. The work of the early navigators was sufficient to the knowledge of the day in which it was conducted, but the significance of habits, of custom, of rites, of legends, and of arts was ignored or wrongly interpreted, and an inexhaustible store of priceless information remained unheeded until it has been effaced and has forever passed away.

THE EXTRAORDINARY CIVILIZATION OF THE POLYNESIAN

And here it may be said that the plane of culture which has disappeared before



ON KAMBARA ISLAND, FIJI

NATIVE FIGHTING MAN: MOEN ISLAND, TURK LAGOON, CAROLINE ISLANDS

a hardy and aggressive civilization, has in some cases been of a much higher order than the intolerance of the early white man could appreciate. With regard to the Polynesian race, this is especially true.

The elaborate religious system of this people had attained a perfection and elaboration of ritual such as has been equaled by few other people. The origin of the dreaded taboo and its development into a wonderful religious and political engine indicates an intelligence of no mean order. The ceremonial by which the hereditary castes and offices was maintained and in which social system was upheld bears witness to a succession of remarkably endowed political rulers.

The tremendous irrigation tunnels by which mountain ranges were pierced required alike great mechanical skill and some knowledge of the principles of surveying. Their elaborate code of water rights, their knowledge of the movement of the heavenly bodies, their familiarity with the currents of the great ocean and their protracted voyages thereon, their evolution of a system of writing, are all matters which excite our admiration and bear testimony to the fact that the Polynesians, so far as permitted by the material accessories around them, had developed a culture which compares favorably with that possessed by other races at the dawn of authentic history.

The ethnological result of the missionaries' presence among the natives is also to be recorded. The motive which actuated these workers is irreproachable, but as a class the ministers of the gospel have been singularly deficient in realizing the importance of preserving an account of native customs and habits. Many noteworthy exceptions, however, occur to this statement, and such names as Ellis and Chalmers will always be associated among those who have contributed to Pacific knowledge. By the not unnatural antagonism of the Christian missionaries to the heathen cult, all that pertained to the native religion was sternly suppressed. The native converts to Christianity, in the zeal and bigotry of their new faith, in turn did everything in their power to suffocate the early religion, and thus effected the extinction of much which cannot be determined.

Together with the ban placed upon the native religion, the whole realm of myth, genealogy, legend, and history fell into disrepute, until, instead of preserving a more or less accurate record of their race in their elaborate oral traditions, the native tribes in many instances now present the condition of isolated units, lacking the record of their past and severed from their affinity to other peoples. One beneficial work of the missionaries was the translation of the Bible into many native tongues, which has thus helped to preserve a record of the languages of the region much in their early purity.

AN IMMEDIATE EXPLORATION NECESSARY

It is probably not too much to say that in the Pacific as great changes are now wrought ethnologically in five years as without the influence of the Caucasian would be brought about in many generations. Another ten years will probably be too late in which, with any prospect of satisfactory result, a complete ethnological exploration of this region can be conducted. Unless the work is actively undertaken long before this period has elapsed, the value to be derived therefrom will be very greatly diminished.

The exploration, therefore, must be vigorously prosecuted now, or on the present generation will lie the reproach of having refused to preserve information of vast importance to the scientific workers of future generations. We of our time cannot content ourselves with the plea upon which we can acquit our ancestors of having neglected this work. They at least erred ignorantly, and even had they been cognizant of its importance were not so well equipped for undertaking it as are we of the present day.

Many of the causes which have contributed to the destruction of the inhabitants themselves have also been at work in undermining the majority of the Pa-

cific fauna and flora. Protected by their isolation from the struggle for survival which continental species must continually maintain; nurtured in an environment admirably tempered to an easy existence; rendered non-resistant to introduced disease by long generations of immunity; situated on small islands which afforded no means of retreat, the native species of both animal and plant life have in most cases proved unable to exist in the aggressive competition with hardier types.

The decay of the native bird life in many islands is remarkable, although other than exotic influence has assisted in their destruction. On the island upon which Honolulu is situated, more than half the native species of birds have become extinct during the last century. Upon the land mammals of the region the effect has been even more disastrous, and most of the few aboriginal species have so utterly disappeared that no reliable description of them has been preserved. In some cases even their former existence is questioned. The botanical species have in the same way been crowded out by more persistent foreign plants or have been destroyed by domestic animals.

Upon marine life very little modification appears to have as yet taken place, and it is safe to presume that, unless some altogether unexpected factor arises within the region itself, this will long remain stationary. There are, however, evidences which suggest that the Hawaiian coral reefs are not in such a vigorous condition of growth as formerly.

ADVANTAGES OF HONOLULU FOR PACIFIC EXPLORATION

Situated in mid-Pacific, Honolulu affords the best center from which this great work can advantageously be conducted. The foundation of the Pacific Scientific Institution proves that the opportunity of this favored city is appreciated by its inhabitants, and that the work which has lain so long neglected will soon be commenced.

With headquarters at Honolulu, it is proposed to dispatch parties of trained workers upon a specially equipped vessel to the various island groups. At convenient centers, substations will be established, through which communication with the home office may be maintained. Each expedition will consist of a corps of experts, who will carefully record all that is found of sufficient interest to preserve. A careful and elaborate series of anthropometric data will be tabulated; the languages, religion, law, mythology, legend, and genealogy of each people will be recorded; their technology, art, and medicine will be exhaustively studied. Series of mammals, birds, reptiles, insects, and botanical specimens will be preserved; the coral reef, the marine fauna and flora, the ocean currents, the geology and the meteorology, will all be investigated, until the whole realm of nature has yielded up its store of scientific data.

It is anticipated that the work of exploration will be completed in fifteen years. As soon as they can be published, exhaustive accounts upon the ethnology, zoölogy, and botany of said groups will be issued. The most important work of publication will be deferred until all the data of the various expeditions have been received and reduced to order. Under the assistance of the foremost scientists of America and Europe, the records of the whole exploration will be then examined and compared. The publication of these final volumes will probably rank as one of the most interesting and important additions to human knowledge that has ever emanated from a single press.

During the fifteen years in which the exploration is in progress, many other scientific institutions will be established by the central one, supplemental to its work. Of these, one of the most important will be a botanical garden and garden of acclimatization, in which will be grown and studied many of the important plants procured by the collectors. The production of new and improved varieties of tropical fruits and flowers will be an important work of this depart-

OLD KING OF MUAL DISTRICT AND TWO OF HIS WIVES: TURK LAGOON, MOEN ISLAND, CAROLINE ISLANDS

MEN OF PONAPI ISLAND, CAROLINE ISLANDS: *a*, NATIVE KING'S COSTUME; *b*, COMMONER'S COSTUME

DAUGHTERS OF CHIEF NAKIRORO, OF TARI-TARI ATOLL, GILBERT GROUP

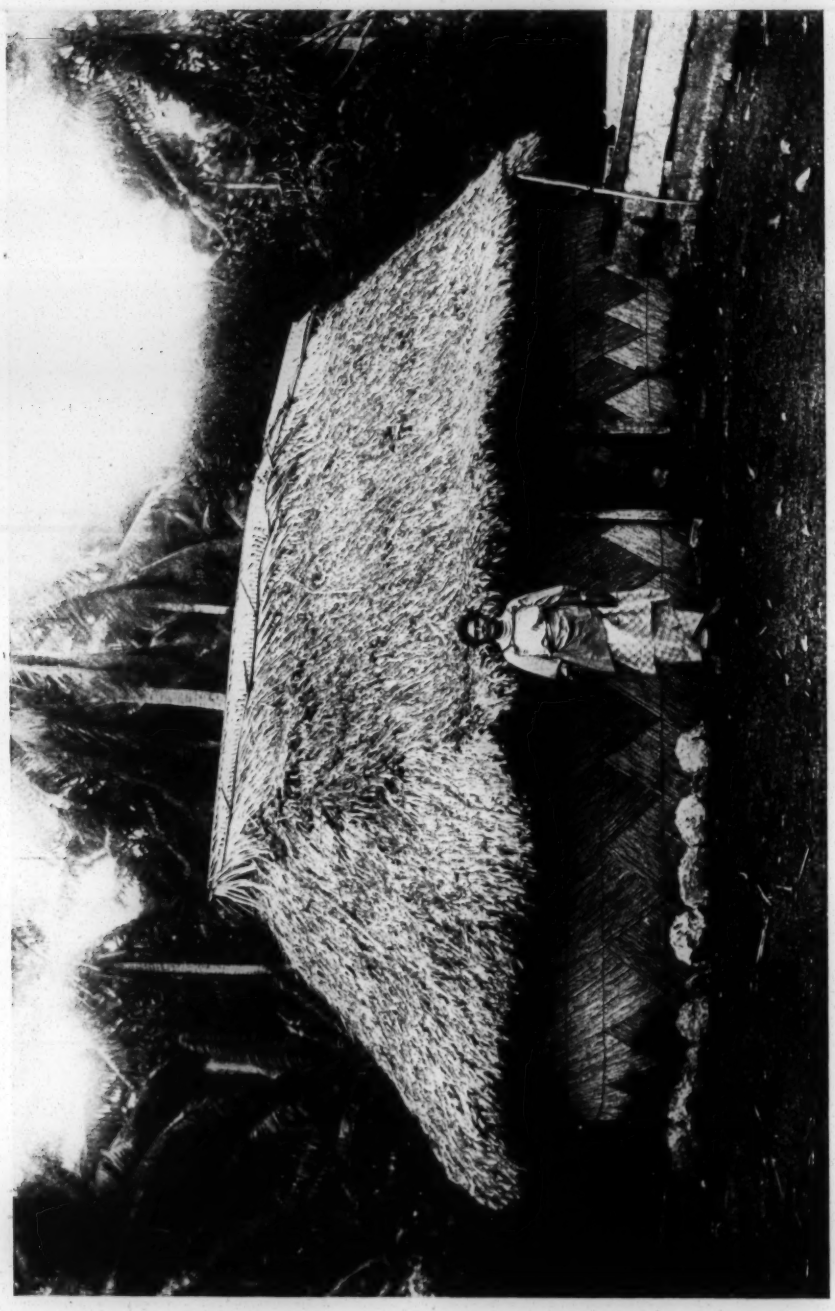
ment and one which should make it famous throughout the world.

When it is considered that our present varieties of such fruit as the apple have been evolved by careful selection during many generations, the future of many tropical fruits which have as yet not similarly been operated upon seems almost limitless. The unrivaled situation of Hawaii and the diversity of climate available from sea-level to mountain peak should in time render a botanical garden established there as beautiful as any in the world.

A zoölogical garden for the reception of the Pacific mammals and reptiles, including an aviary to accommodate its rare and wonderful birds, will also be established. A wholly untrodden field of practical research awaits the economic study of the birds of this region, the importance of which work can scarcely be overestimated. The accession of fishes to the already established Honolulu Aquarium will without doubt make the exhibitions in these three institutions one of the most complete collections of the fauna and flora of a single region which has ever been assembled together.

The study of marine life will also be pursued and a biological station will be equipped for this purpose. Here will be established tables for the study of marine biology, to which will resort stu-

NATIVE WOMEN AND CHILDREN: TONGUFALI VILLAGE, FUNAFUTI ATOLL, ELLICE GROUP



HOUSE OF JOHNNIE TOGA, A NATIVE CHIEF: VAVAU ISLAND, TONGA GROUP

NATIVE PRINCESS "MÉLE:" NIUE ISLAND, TONGA GROUP

NATIVE CHILD: HEREHERETUE ATOLL, LOW ARCHIPELAGO

dents from many other countries. Scientific men have come to regard the biological station as one of the most important fields of original research, for from the study of the elementary cellular creatures of the ocean it is expected that the baffling enigma of the origin of life may at length receive enlightenment.

As the result of the survey, a wonderful collection of ethnological specimens will also be assembled in Honolulu. The disposition of these among the various institutions of the world which collaborate in the undertaking will be an important consideration. The main collection should, however, be retained to augment the already goodly collection of the celebrated Bishop Museum.

As time goes on and when the whole series of establishments are in operation, Honolulu will rank among the foremost centers of scientific research. The antiquarian, the ethnologist, the zoölogist, and the botanist will look to the Hawaiian Islands as preserving the record of many of the most interesting objects of their various departments of learning.

It is anticipated that when the establishment of the Pacific Scientific Institution becomes known, many patrons of science will avail themselves of the opportunity of contributing to an undertaking which will so greatly benefit our race. The manner in which the Institution has been incorporated and the trustees under whose administration it has been placed assure us that the long-delayed work of Pacific exploration will shortly be commenced.

BISKRA, THE ZIBAN QUEEN

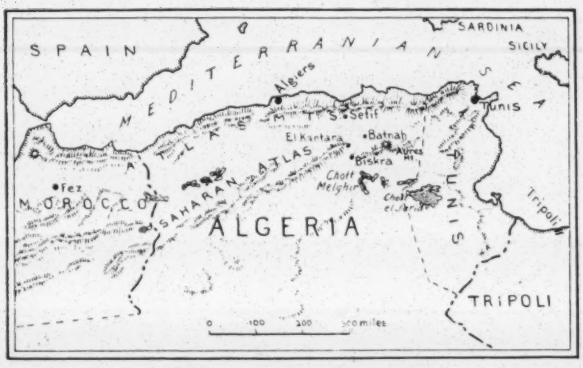
By Mrs George C. Bosson, Jr.

The photographs accompanying this article were sent to this Magazine by Miss Louise Coleman, those on pages 578 and 579 being taken by her, while the others were purchased.

TO the uninitiated, what vision rises at the thought of an oasis in Sahara? I confess that in my mind there used to be the picture of sparse grass struggling through smooth yellow sand, a few tall, fronded palms, a well and some camels, with burnoused Arabs kneeling in the background against a setting sun—a *tout ensemble* traceable, doubtless, to a cut in some primary geography. I know I never expected a miniature city, with churches, clubs, markets, hotels, barracks, shops, with cafés-chantants and wickedness sufficient to have earned the sobriquet of "la petite Paris"—on my word, no. I always had a latent romantic leaning toward the bold Bedouin and "king of the desert," and to the desert we went to get a nearer view.

We had left behind us the snowy stateliness of the Atlas Mountains and the Kabyle villages with their vivid impressions of Eastern existence. We had seen Jacob and Joseph, as one imagines them to the life, Ruth in the fields and Rebecca by the well, and a white-robed patriarch coming down the mountains with a light about his head as the sun's last rays burst upon him, and in his arms a petted, straying lamb. And as we sped on in the twilight, the shepherds watching their flocks by night, "all seated on the ground," and one shining star above, made peace on earth seem nearer, though in the world of telegrams and newspapers which we had left far behind wars and rumors of wars were cruel and rife.

At Setif, a French garrison village high up in the mountains (Setif is at an elevation of 3,700 feet), we spent the last night before entering the desert, and



SKETCH MAP OF ALGERIA

the combination of colonist and native in the tiny town made us realize the importance of the problem which, together with the "question Kabyle," now confronts the French republic. The little hotel was comfortable and clean, and the pale blue and scarlet coats of the military men, the white burnouses and gold-embroidered waistcoats of the Arabs, the black cassock of a priest, and the fur-trimmed jacket of a visiting *chasseur d'Afrique* gave the place almost the appearance of a costume ball. The colonel of the regiment was dining alone, and within joking distance were five spruce young officers, whose grades of rank were almost as evident from their manner as from the number of stripes on the bright *kepis* ranged on the wall beside them.

An early start next morning was an effort to a lazy woman, but the keen air, the glorious sunrise, and the sights of Setif in morning light were generous rewards. From glimpses through open doors, and dark circles under the eyes of very evidently up-all-night officers, I have an idea that absinthe and seductive green baize tables may be almost as responsible for the worn and jaded look of the bronzed Algerian soldiers as are African suns and forced marches.

At Batnah a stop for lunch, and a disappointed woman listened hard but failed to hear "the lions' roar come down the Libyan wind," for here we are near the great cedar forests where lions and panthers yet lair. "Beyond there lives the Said," says the Arabs in the respectful tone in which they always mention the King of the Atlas, and a sample of Arabian philosophy is their proverb concerning his majesty: "He who kills him eats him, and he who does not kill him is eaten by him."

On again, across rocky dunes and by salt lakes, vegetation appearing only in tiny bunches of sage-brush among the stone and sand, with rare clumps of fennel, rosemary, and candytuft, seemingly strayed from a New England garden, once in a while an encampment of Kabyles, surrounded by a corral of thorn-brush, and long lines of cactus and aloe standing out against a burning blue sky.

A herd of antelope pass in the distance, and beyond is a billowy waste of plain in an indescribably yellow, mellow light, with bare hills like sentinels in the background. What is that slow-moving line of dark? What but our first sight of a caravan, twenty or thirty camels with their striped packs, a little herd of goats, Arabs on horseback trot along the line, and plodding, patient figures bring up the rear.

And as we go on over the billowy sands, seemingly our course is stopped; for a line of sharp, needle-like, castellated red mountains of fantastic outline appears, like fortified heights with bastions round their sides, to bar our way. But no, there is an opening, a gate—a gate, indeed, El Kantara of the Arabs, Fromenti's "Porte d'Or de Sahara," and the Calceus Herculis of the Romans; and here was it that the famous Third Augustan Legion was quartered. Vanished are the visions of the oasis of geography days, the oasis veritably bursts upon our gaze, and we have our first sight of what Murray says is one of the three most wonderful views in this wonderful world of ours, while Lamartine's *"tu parais, le desert s'anime,"* comes to our thoughts.

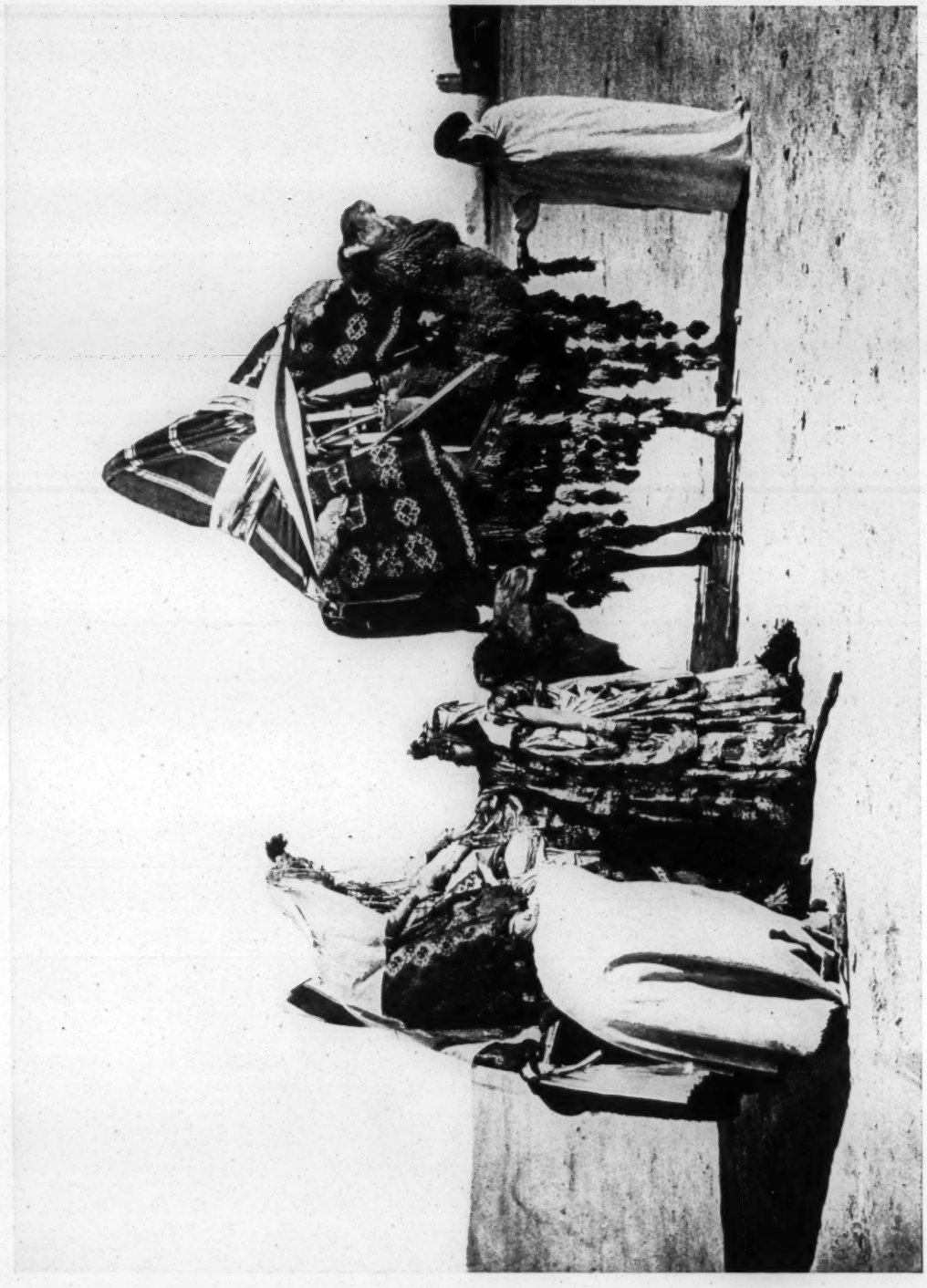
We are told that there are fifty thou-

ZOUAVES AT SETIF

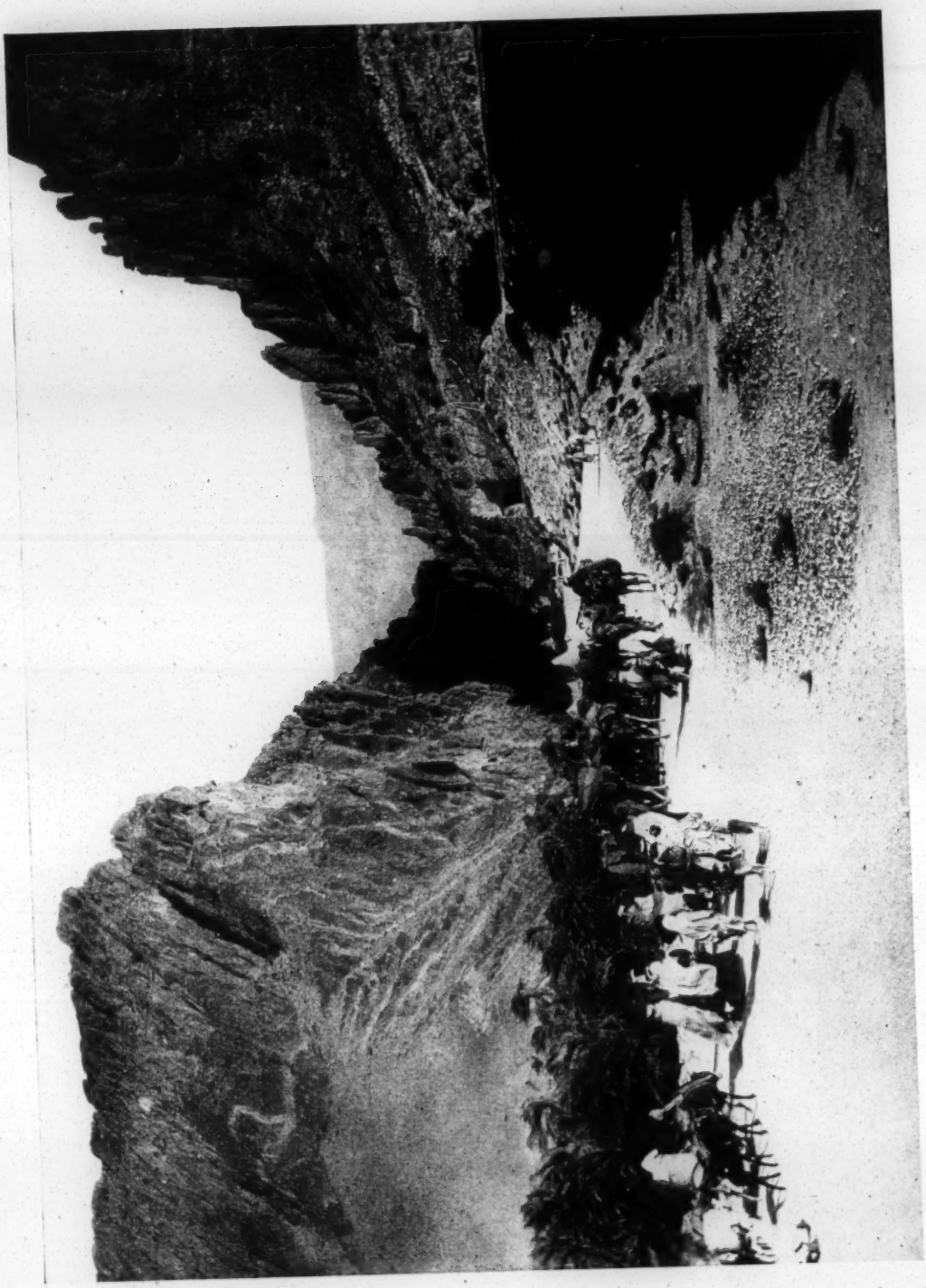
sand trees in this oasis of El Kantara—date-palms, oranges, and figs, the first predominating. There is a waving green sea of foliage set down in the burning sand, with quaint Arab houses nearly hidden in the trees, and square, high watch-towers looming among the palms. These *towers* are towers for the guards who watch the fruit when ripe, for the Arab has notoriously vague ideas of *meum et tuum*. Water everywhere, in wells, in pools, in irrigating ditches among the trees, for the Arab proverb says that the tree of the desert "must grow with his feet in water, his head in fire." As suddenly as it began, the emerald verdure ceases, and there is the golden desert stretching on again in its vastness. Not level though, and here again has the primary geography somewhat deceived us, for in this region Sahara is mountainous and rocky, though this phenomenon is not seen north of Biskra.

Presently some Roman ruins are passed, fragments of cornices and shafts of columns, remains of an aqueduct and masonry, and the ruins of a square fort built in the reign of Caracalla, he of bath fame, who, with his brother-emperor Hadrian, the traveler concludes, must have been a very busy man. Along our way the sand-hills are white with saltpeter, and at the end of a limestone range is the Montagne du Sel mentioned by Herodotus, a hill of bluish-gray rock-salt. The south boundary is the Djebel-bou-Ghazal, and as we approach Biskra the ruins of a Turkish fort are passed, and then, *en face*, appears the square and sturdy outline of Fort Saint Germain, the French fortification guarding the precious possessions of the "Ziban Queen."

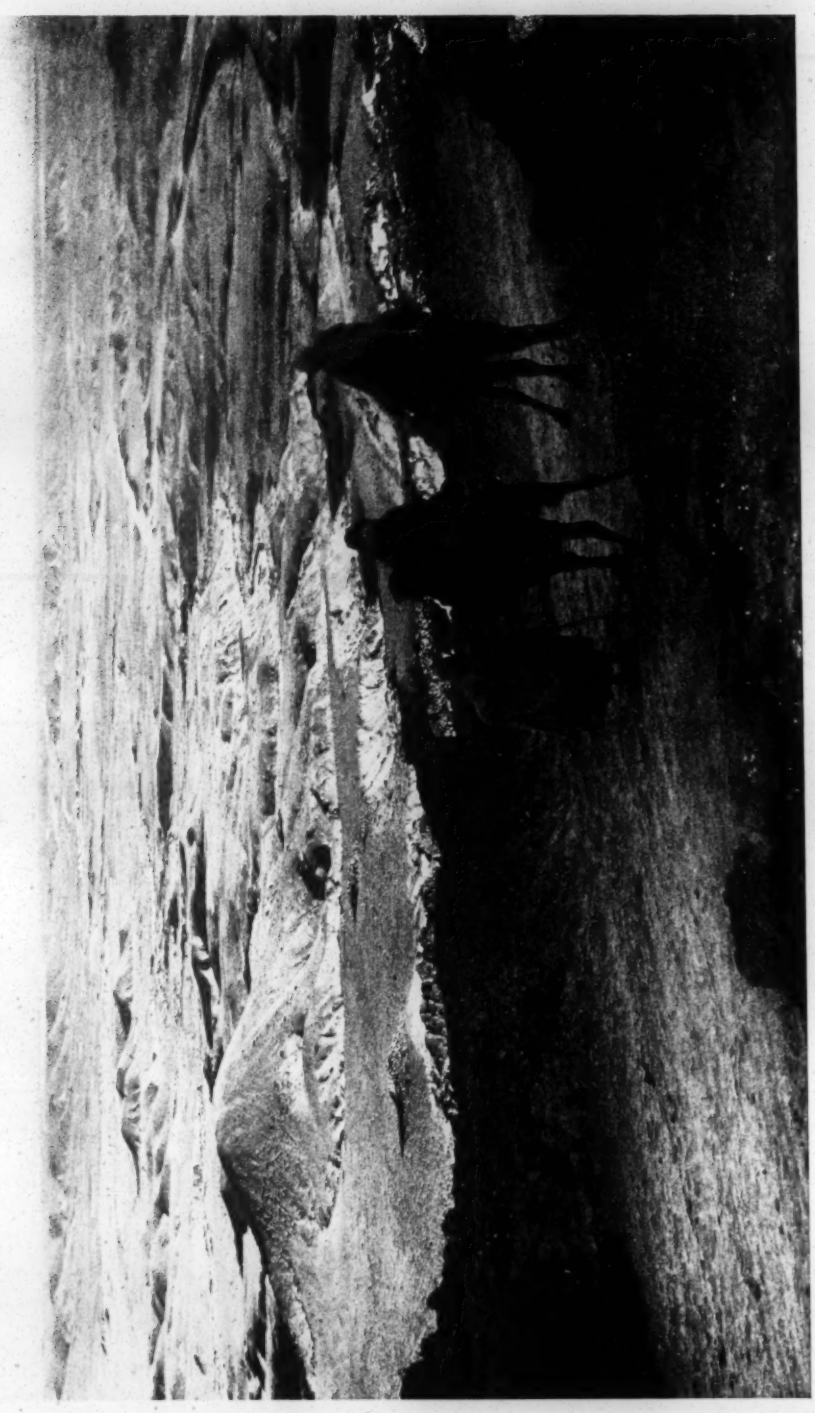
We resort to Murray for facts, and learn that we are 360 feet above sea-level, that the oasis is six miles long, possesses 170,000 date-palms, beside tamarind, fig, and orange trees, and likewise possesses what is claimed to be the most perfect climate in the world from No-



SHIPS OF THE DESERT



ON THE ROAD TO BISKRA



LOOKING ACROSS THE DESERT ON THE ROUTE TO BISKRA

vember till May. Its genial temperature, clear sky, and luxuriant vegetation are indisputable charms, and its dry atmosphere makes it particularly curative for pulmonary diseases. A gentle shower during one day was the first rain that had fallen for seventeen months, and yet there is that never-failing supply of delicious cold water from natural wells throughout the whole oasis.

There are five villages in this island of the sand-sea, and the outlying oases of Filiah and Geddecha also belong to Biskra. The Arab villages and the *village des negres* are built of sun-dried mud, with doors and flat roofs of palm-wood. Among the ruins of *le vieux* Biskra, where before the new fort was constructed the French fortified the old Kasbah existing at their arrival, are a heap of Roman blocks and columns, which are all that remains of the Roman outpost of Ad Piscinam. The French village is clustered around Fort Saint Germain, named for a gallant officer killed during the Zaatcha insurrection in 1849, and which is capable of sheltering the whole civil population.

There is a pretty public garden, where feathery pepper trees make a pleasant shade, a church, a mosque, streets of shops, a handsome casino and officers' club, and three good hotels, of which the principal one, the Royal Hotel, is said to be the best in Algeria. It is certainly a delightful surprise to find in Sahara a hotel with every appointment of elegance and comfort. Count de Landon has a charming winter residence here with a wonderful garden, which it was our privilege to visit. He has successfully acclimated many precious tropical fruit trees, among them the mango and the custard apple, and possesses some of the grandest specimens of *Pônciana regia* in the world.

A visit to the market place during the morning is one of the sights of the town and oriental in every tone. Squatting groups of bronzed-legged Bedouins, in brown and white camel's-hair burnouses, are selling cous-cous, dried peppers, and of course dates. Bunches of fresh grass and green barley and thistles are heaped in one corner of the inclosure, Moorish slippers here and a pile of red fezzes there, and souvenirs for the tourist not lacking. For fifty centimes one may purchase a set of graceful gazelle horns, and curious knives and Arabian guns tempt the collector on her way. An ebon negress is selling oranges, an Arab boy in a red fez, and not much else, carries a basket of purple fruit in green leaves, while cloaks, burnouses, turbans, and yakmahs, purple, blue, deep red, and spotless white all crushed together, make kaleidoscopic color in the whitewashed square. Bags of henna leaves, for staining the nails in Arab fashion, send forth their pungent odor, and the aroma of coffee and cigarettes fills the air. A Kabyle girl in red gown, tattooed bluely as to her forehead and cheeks, stained yellow as to her finger tips, passes us, cigarette in mouth, her bangles and anklets clanking as she goes.

Outside a Moorish café a row of Moors, clean in their white burnouses, are solemnly crouched, two of them playing a grave game of chess, but the rest doing nothing to perfection, without a trace of boredom or a gesture of impatience, a state of dreamy delight achieved apparently by habit of mind, a realization of Arabian Keyf. Two merry cantinières go briskly along, and behind them glide two Sisters of Charity. Occasionally a tall figure in white burnouse and dark blue or pale gray cape, with crimson fez and gold-embroidered jacket, passes, and the dark eyes and white teeth flash down in friendly glance. Occasionally, too, there is a suspicion of genuine attar-of-rose whiffed on the air, as one of this oriental *jeunesse dorée* walks by us, and we are reminded of what an Arabian courier once told us: "In my country, if a man have perfume on his clothes, it makes scandal!"

Scandal there may be, even here, but there is no yellow journal. News is cried by a zouave who beats a drum, then stands and proclaims his tale, and passes on to the next street. Noises of all kinds are rife, the impossible consonants of

Arabic are hurled to and fro, the "Illah!" of a donkey-driver pierces the air, the glissade of the musical French slips in, the kneeling camels in the square roar loudly as the packs are strapped to their backs. There is the rattle of regimental drums, the clear call of the bugle, or the strains of "Partant pour la Syrie."

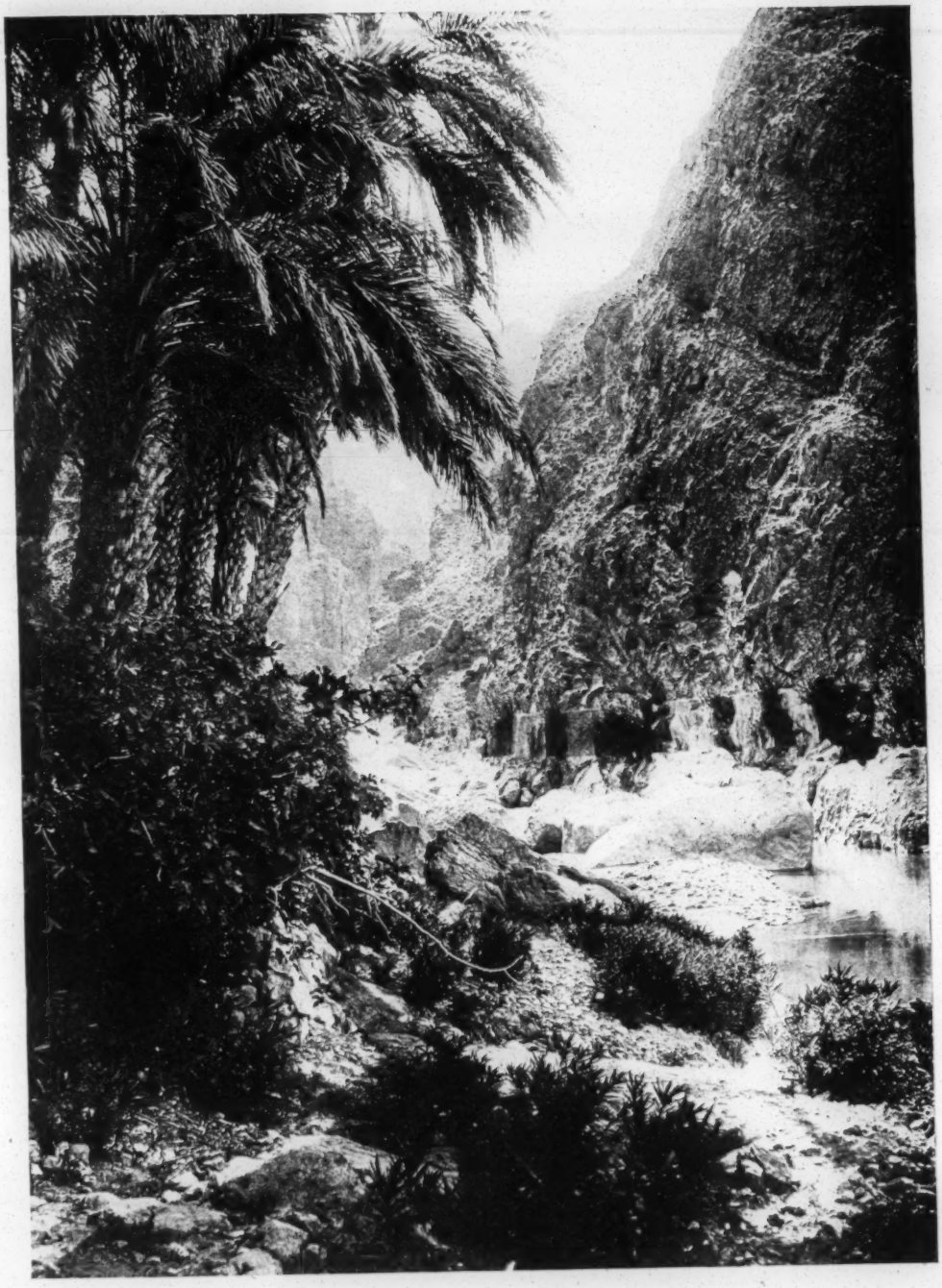
In walking one day to an Arab village at a distant end of the oasis, we chanced upon a group of Arab girls bathing in a pool, partly screened by lustrous green foliage. They were splashing and playing like ducks, their limbs glistering, their dark hair streaming. Of a second, our approach was seen. That a man—there chanced to be one in our party—should gaze upon their unveiled faces, covered though they might be to their chins in water, was an event to be avoided. There was a short succession of screams, a glimpse of bare feet and bare young bodies as they scampered away, with their burnouses wrapped about their heads, for the faces must be hidden, of course!

Murray says: "The street of the Ouled-Naïls, with its café and oriental dancers, is a place where no European woman should go." Murray failed to taboo the American woman's sightseeing in this Biskran tenderloin. I wonder why? At all events, being children of our grandmother Eve, we wished to go. In Algiers we had managed to escape from the Spanish courier whom we had had—to speak correctly, he had had us—and, being two lone women, sought in our perplexity as to a chaperon for the café the advice of that useful gentleman, the hotel concièrge, who is alike consul, valet-de-place, and interpreter in one. In this particular instance he was a blonde and soldierly German from the Rhineland, always courteous and fatherly, speaking French, German, Italian, English, and Arabic in as many minutes, and equally at home in each. He assured us that we might safely go to the street of the Ouled-Naïls and the café, and that as our escort he would send a French-speaking Arab servant from the hotel; we were cautioned to leave our money at home, giving to Mahamed, the aforesaid Arab, sufficient silver for use.

There was a mysterious charm in the quiet night as we followed the white figure of Mahamed and the light of his curious old lantern. Other white-robed figures passed or met us, and once or twice the *"Allah yahmahnik"* (God be with you) of a friend greeted our guide. The stars were intensely bright overhead, and the briskness, purity, and sweetness of the air too delicious to describe. Passing into the street of the Ouled-Naïls was a sudden transition to much life, color, and noise, the street itself full of Arabs, young and old, while on matting outside nearly every door sat the Ouled-Naïl girls, drinking coffee, smoking cigarettes, and chattering what was presumably Biskran slang at any halting passers-by.

The Ouled-Naïls, sometimes called Almées, are girls from an oasis at some distance from Biskra, and of mixed Arabian and negro blood. They are more remarkable for their singularity of costume and grace of dancing than for the rigidity of their morals. Their faces are daubed with tar and saffron to accentuate the color of the Afric sun; tattooing in blue is quite la mode, and their hair, mixed with wool and stiffened with grease and tar, hangs in ebon loops about the face. They wear loose gowns of bright cotton, and gold and silver coin, coral, and filagree in barbaric abundance, sometimes twenty pounds of silver being carried in the shape of bangles, anklets, chains, and massive girdles.

From a brightly lighted, low, white building came the discordant music of reed instruments and the tom-tom of harsh drums, and thither we followed Mahamed. The little place was quite filled, a space in the center being reserved for the dancers. In one corner was a little stone furnace, and here an Arab, wearing the turban which denotes a pilgrimage to Mecca accomplished, cooked and served Arabian coffee, the aroma filling the room. What a picture it was, the bright fire and its reflections on the gleaming copper of the tiny coffeepots, the bronze faces under the crimson

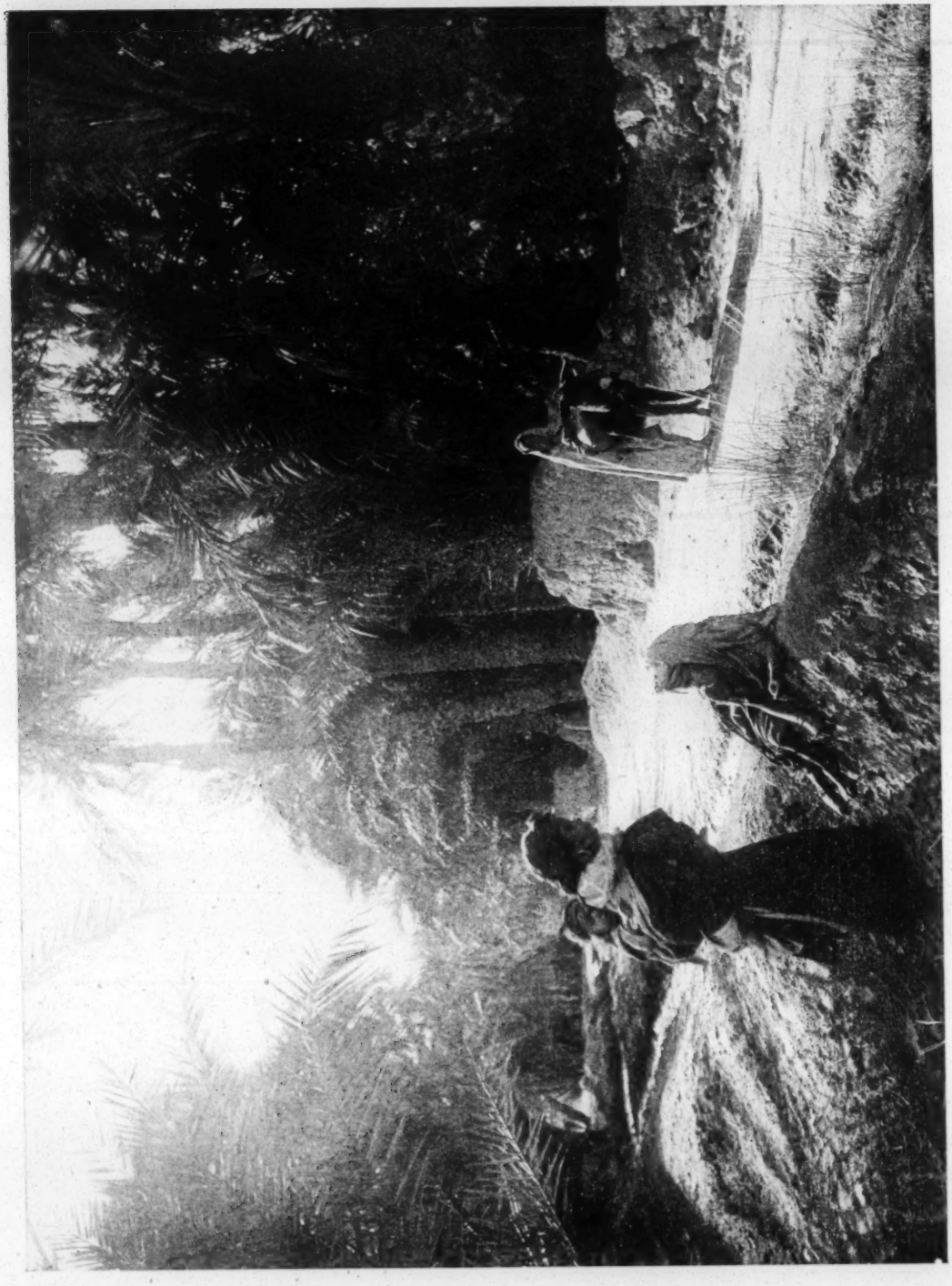


A CANYON IN THE OUTSKIRTS OF BISKRA

IN THE PALM GARDENS: BISKRA

GOSSIPING ON A STREET CORNER: BISKRA

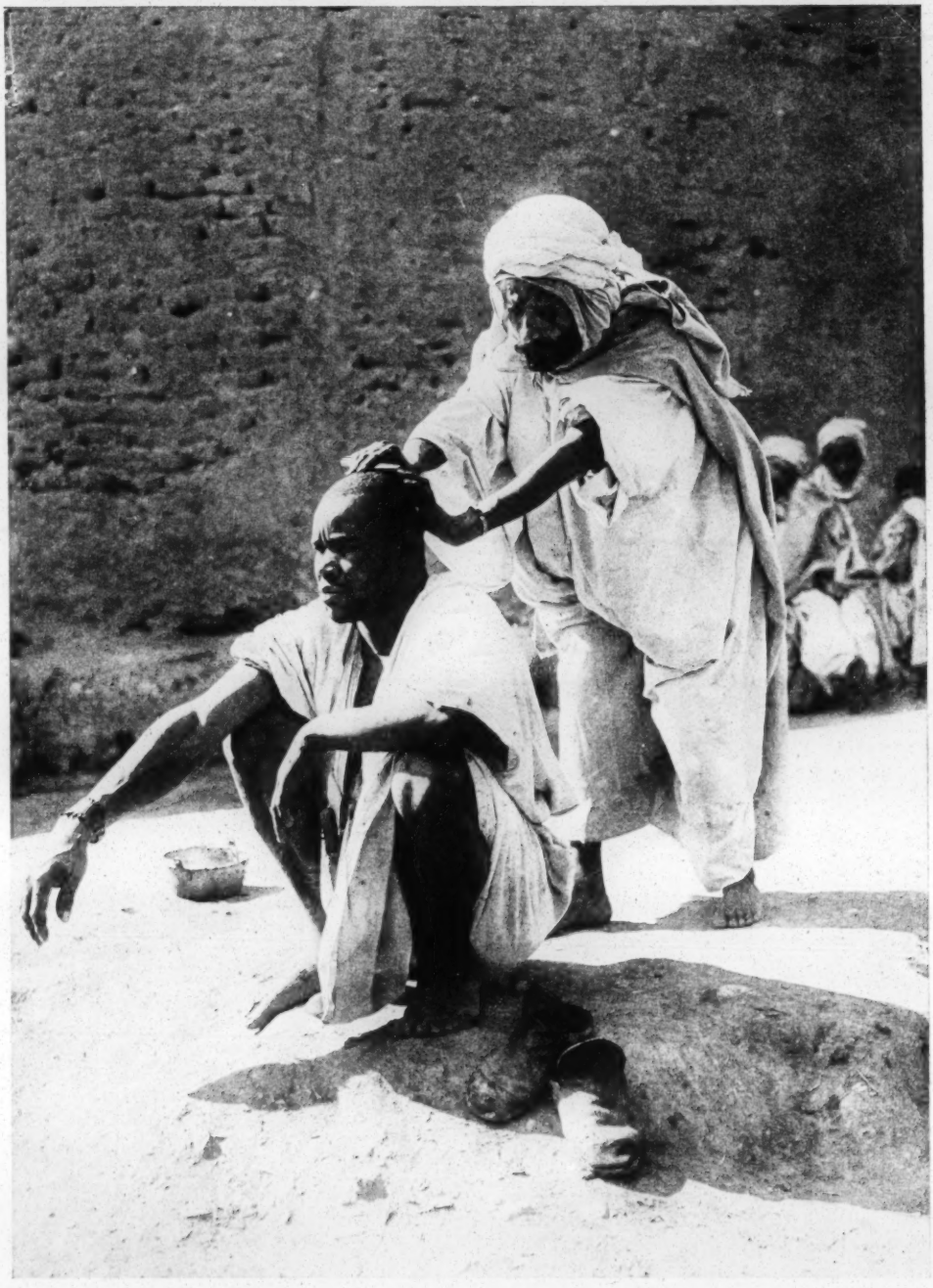
THE HORSELESS PLOW



THE ROADS ABOUT BISKRA HAVE A BIBLICAL ATMOSPHERE

OUTSIDE A CAFÉ: BISKRA

A REST BEFORE THE DESERT JOURNEY



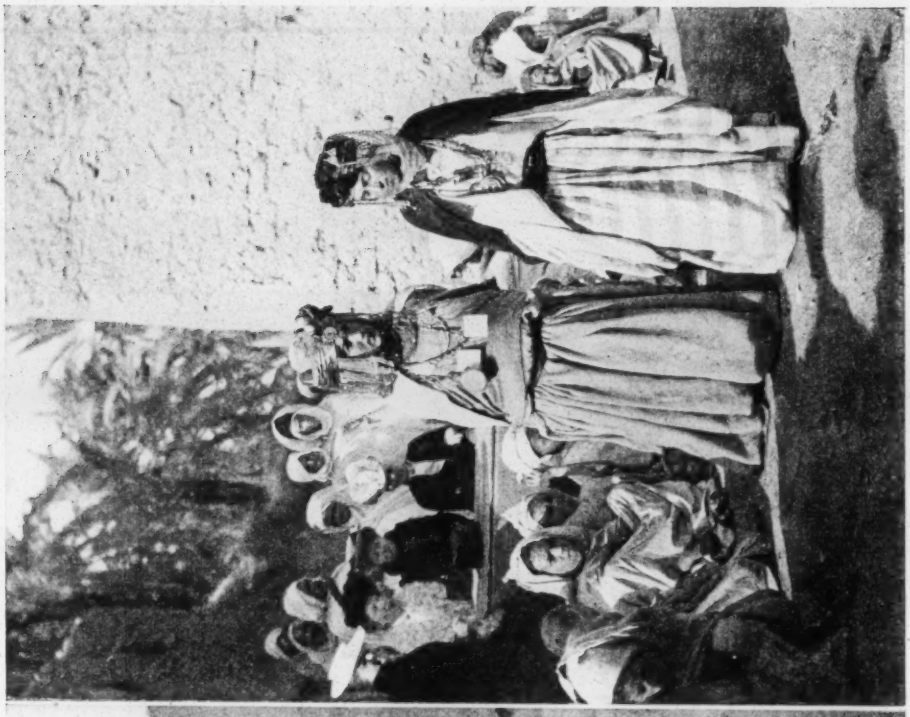
A TYPICAL BARBER SHOP: THE OPEN STREET

AN OULED-NAIL: BISKRA (SEE PAGE 570)

STREET SCENE IN BISKRA

AN OULED-NAIL

A SELLER OF BREAD

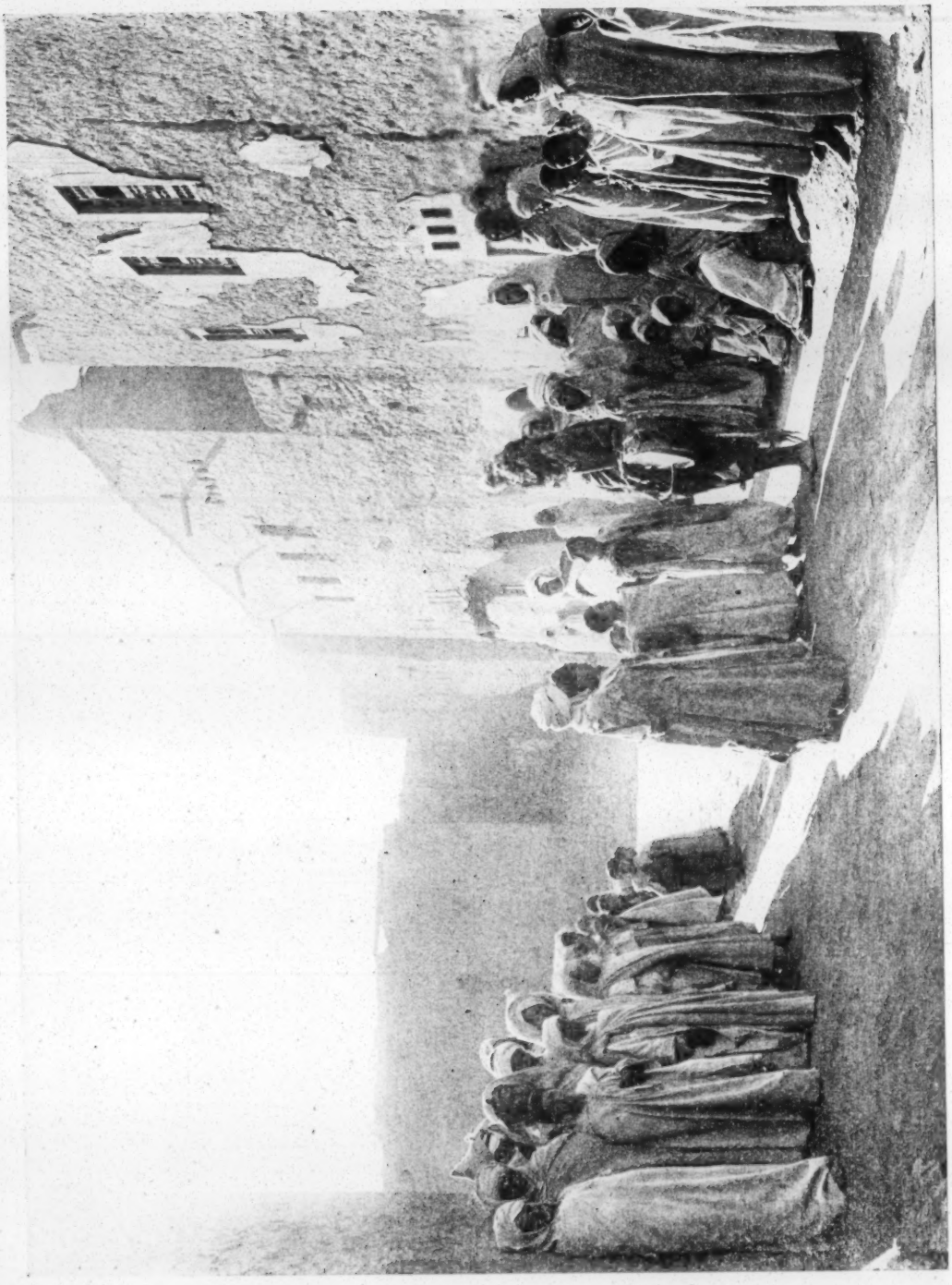


DANCING GIRLS: BISKRA

A HAPPY FAMILY: BISKRA

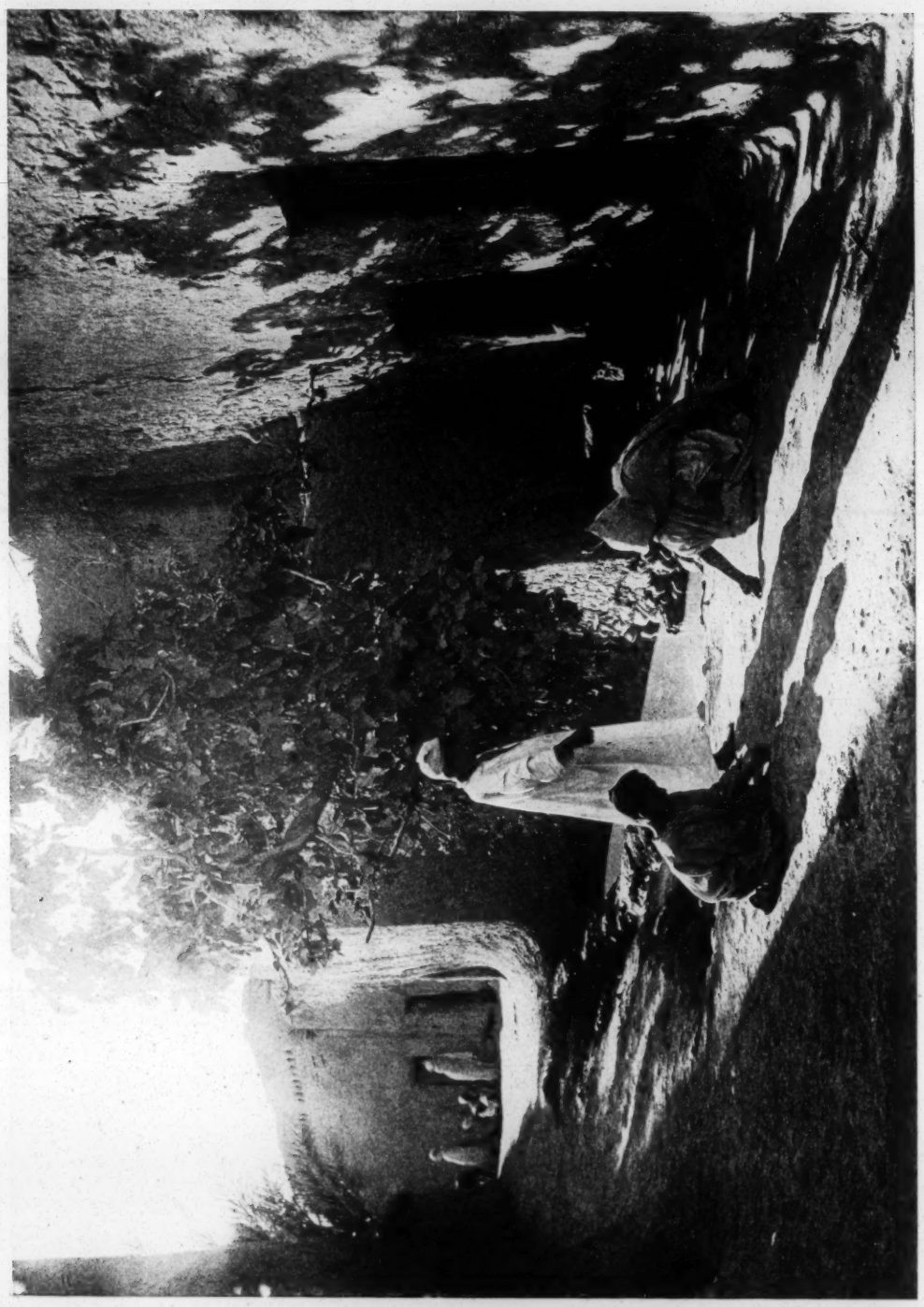
RAPID TRANSIT IS NOT ESSENTIAL IN BISKRA

A WAR LORD OF THE DESERT



A STREET CROWD: BISKRA

THE MARKET PLACE: BISKRA



PLAYING MARBLES: BISKRA

A TEACHER ADMINISTERING DISCIPLINE TO A PUPIL BY RAPPING HIS HANDS: BISKRA

GATHERING THE DATES

fezzes, the white draperies contrasting with the gay gowns of the Ouled-Naïls. Four other visitors, likewise with Arabs from the hotel, had come to see the dance, and as two of them were unmistakably English women, they had as unmistakably disobeyed Mr. Murray.

Places were made for us on a bench beside some Arabs. Mahamed brought coffee to us, the orchestra redoubled its weird, monotonous, doleful music, and the dancing commenced. Slow it was, at first, and accompanied by much waving of scarfs, a sort of bolero; then it grew more animated and suggestive, until the girls, breathless and nearly exhausted, crouched in front of the orchestra, and two more took their places. As soon as the first dancers had recovered a bit of breath they walked about, stopping in front of each group for expression of appreciation in the shape of coin of the realm. Mahamed gave me two pieces to stick on the foreheads of the ladies, for such is the fashion of payment. Concerning the dance itself, I refrain from detailed description. It was the *danse du ventre*, or muscle-dance of the Orient, a modified form of which was shown in the Cario street of the Midway. It was a bit suggestive and more than a bit risqué.

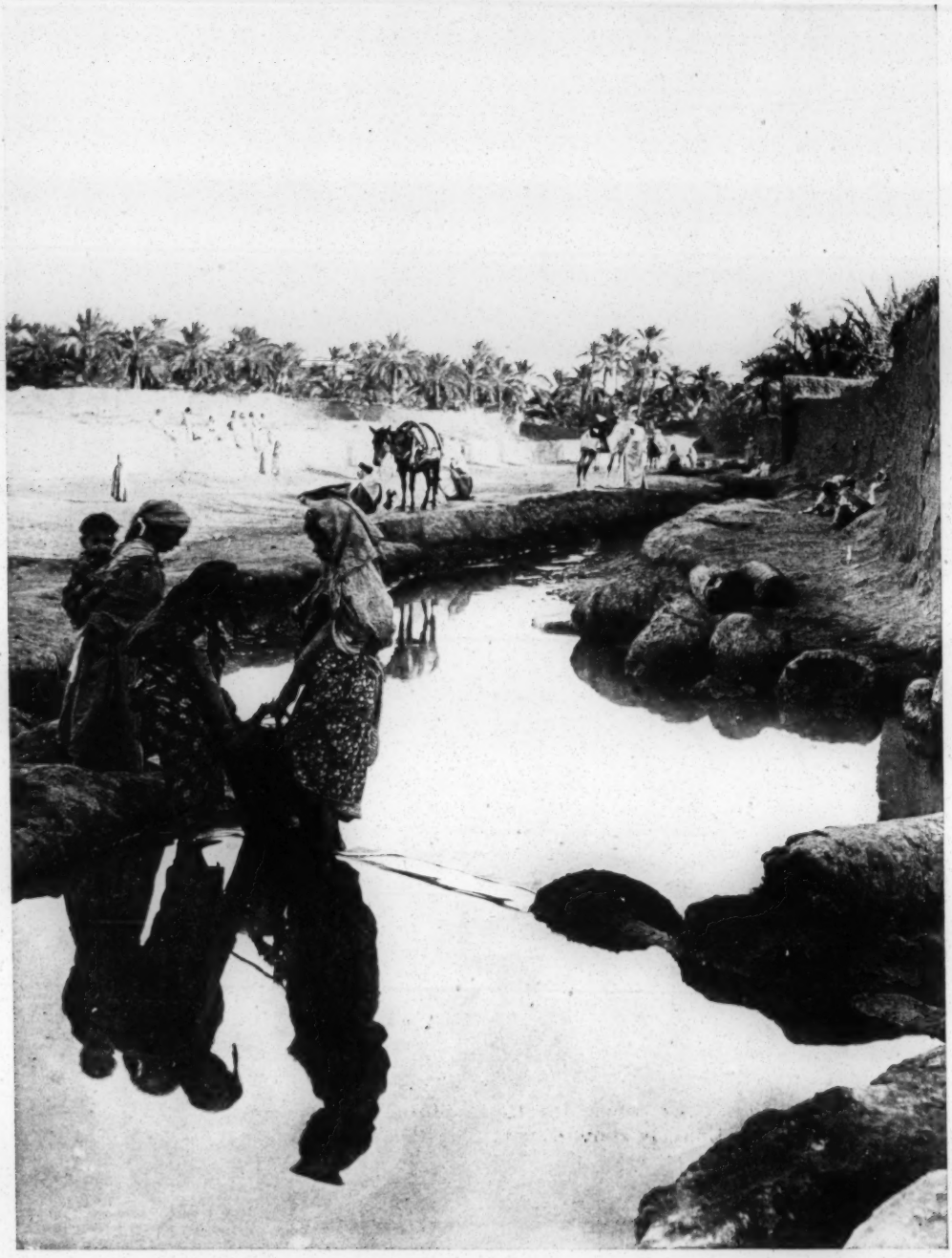
Six kilometers from Biskra, under the shadows of Djebel-bou-Ghazal, are the marvelous hot springs of Hamman Salahin, the "Bath of the Saints." A tiny tram runs to it, out across the sands, and the place is curious to see. The water bursts out with great violence at the rate of forty liters a second and at a temperature of 112° Fahrenheit. There are baths for French and other visitors, and these are said to be very efficacious for rheumatism. Outside the baths the surplus water is collected in reservoirs for the Arabs to bathe; there is some superstition attached to the springs, and the natives plunge in and parboil themselves in the holy water.

If Biskra is the political and social center of the Ziban, and the Ziban is the group of prosperous oases, villages extending from the foot of the Aures Mountains to the Chott-Melghir, the religious capital is Sidi-Okba. Sidi-Okba is an oasis distant twenty kilometers from Biskra, and is named for that old warrior who, at the head of a small body of Arab cavalry, went forth to conquer Africa in the sixtieth year of the Hedjira. When he had extended his conquest from Egypt to Tangier, he spurred his horse into the Atlantic, declaring that only such a barrier could prevent him from forcing every nation beyond it who knew not God to worship Him only or die. In a revolt of the Berbers he was killed, A. D. 641, and when the Arabs had reconquered the Ziban their leader was buried in the oasis which bears his name.

The track across the desert to Sidi-Okba is practical for carriages, and our turbaned driver galloped his three horses harnessed abreast over the hummocks of sand and tufts of sage-brush till we begged for slower pace. Soon after leaving Biskra we crossed a stony tract a quarter of a mile broad, with a deep stream in the center, the Oued-Biskra, and emerged on the desert. The tiny oasis of Feliah is passed on the right, the dome of a Marabout's tomb shining among its trees. The long, low-lying line of the palms of Sidi-Okba is in the distance; the Aures Mountains rise in golden and rose glory, the deep clefts in their side blue and mysterious.

Groups of Bedouin tents are passed at intervals, and the scarlet rug, the copper pan, the fire, and its group are dashes of bright color in the yellow-browns of earth and camp, canopied always with the dazzling blue of the sky. Herds of camels feed on the dry sage-brush of the plain, and the baby camels trot by their mothers in coltish fashion.

Occasionally three or four little fellows dart from the camps as we pass, and run nimbly by the side of the carriage. "Sontie, Sontie," they call, and stretch out pleading hands. Centimes, to be sure, are what they ask, and when we throw out some sous there is a diving of little black polls, a scramble, and a fresh sprint. Having no clothes, they could



A RIVULET OF MUDDY WATER WHICH FLOWS THROUGH THE MAIN STREET OF SIDI-OKBA

have no pockets, and the money went into their mouths.

Five other oases are passed, Chetnah, Droh, Sidi-Khabil, Seriana, and Garta, and at length we approached the mud wall which surrounds the sacred oasis. Four thousand Arabs live in this village, and the mud houses are thickly packed, the streets narrow and indescribably dirty, with rivulets of muddy water running down the center. The tiny shops are open to the street, in Eastern fashion, and behind their wares the cross-legged merchants sit in stoic indifference. The most primitive of tools and of workmanship characterize the bazaars, and there is a lack of the attractive objects one sees in most oriental towns and shops, only the necessities of existence having place here.

Half-naked boys play a game with sticks and ball, hockey, perhaps—or, stay, can it be an Arabian form of golf? Perhaps that quick cry means "fore" in the Arabian tongue. Who knows? Heads of veiled women peer out behind the screen of a hanging blanket in the back of a shop, and an Arab, somewhat cleaner than any we have yet seen, accosts us in fair French, assuring us he is the only person in the oasis who speaks other than Arabic, and offering his services as cicerone.

A short and decisive bargain, and we follow our guide, followed in our turn by what seems half the population of the village, to whom we appear to be something in the nature of "freaks." Immediately behind us three lank fellows in torn brown burnouses brandish long bamboo rods to keep the curious populace from too near approach.

Through tortuous, winding streets we reach the square old mosque, built of mud and plaster, and said to be the most ancient Mohammedan building in Africa. It is a place of pilgrimage for the faithful, this tomb of a saint, and there are at least a hundred devotees at prayer in the place. Rags are tied over our Christian feet, and we follow our guide into the dark old mosque. Quiet it is and still, though just at the entrance a group of ascetic-looking fellows, Mohammedan "divinity students," are loudly repeating prayers from old tablets, swaying to and fro on their knees as they chant their supplications. But within quiet reigns, and the kneeling or prostrate pilgrims do not move as we creep softly by. The flat roof is upheld by rude columns, one of which, with its spiral ornamentations, suggests that its first use was probably in some Roman building. The moslem "half-orange," though ruder here than in the delicate alabaster of the Alhambra, arches over, with its seat for the Mufti on the eastern side, and beside it is a carved door of fine workmanship.

The shrine of Sidi-Okba is in a sort of chantry screened off from the mosque, and is of the common Marabout shape. It is hung round with ostrich eggs, chains and amulets of silver and copper, and, what appears to be particularly precious, a large gilt mirror frame. On a near pillar is a rude inscription in quaint Arabic, or Cufic, said to be the oldest Arabic inscription extant, and grand in its simplicity: "This is the tomb of Okba, son of Nafa. May God have mercy upon him." The minaret is said, according to Arab legends, to tremble visibly when the saint is invoked according to a prescribed form. But, though it is leaning and insecure, we felt no tremble as we ascended the high, winding stairs. Emerging upon the roof, the fascination of the sudden apparition of the Saharan scene held us fast. The level desert stretched before us, a golden sea of sand, the dark islands of distant oases recalling the simile of the panther's skin. Grander far is it than the surface of the ocean without a sail, the far-off line where earth and sky melt into one suggestive of distance, mystery, and unknown existence, that "dry country abounding in dates."

The flat roofs of the village surrounded us, and many a veiled woman's figure, swaying and bowing with monotonous genuflection, reminded us that the feminine faithful resort to the housetops to pray.

Across the sand dunes and by the

Bedouin camps, where no doubt "fair Zuleika awaits in her tent," we gallop back to Biskra, the apathetic "ships of the desert" scarcely looking up from the sage-brush as we pass. With eyes trained to peer for big game in American forests, the writer looked in vain for gazelles or ostriches, each moving speck on nearer view always proving a camel. But gazelles and ostriches do abound, says the Arab, and also at some seasons the *serpent à corne,* whose bite is said to be fatal, though these last are seldom found near Biskra. Dried ones, souvenirs of what one did not see, may be purchased for a franc, and seem rather more desirable than the live variety.

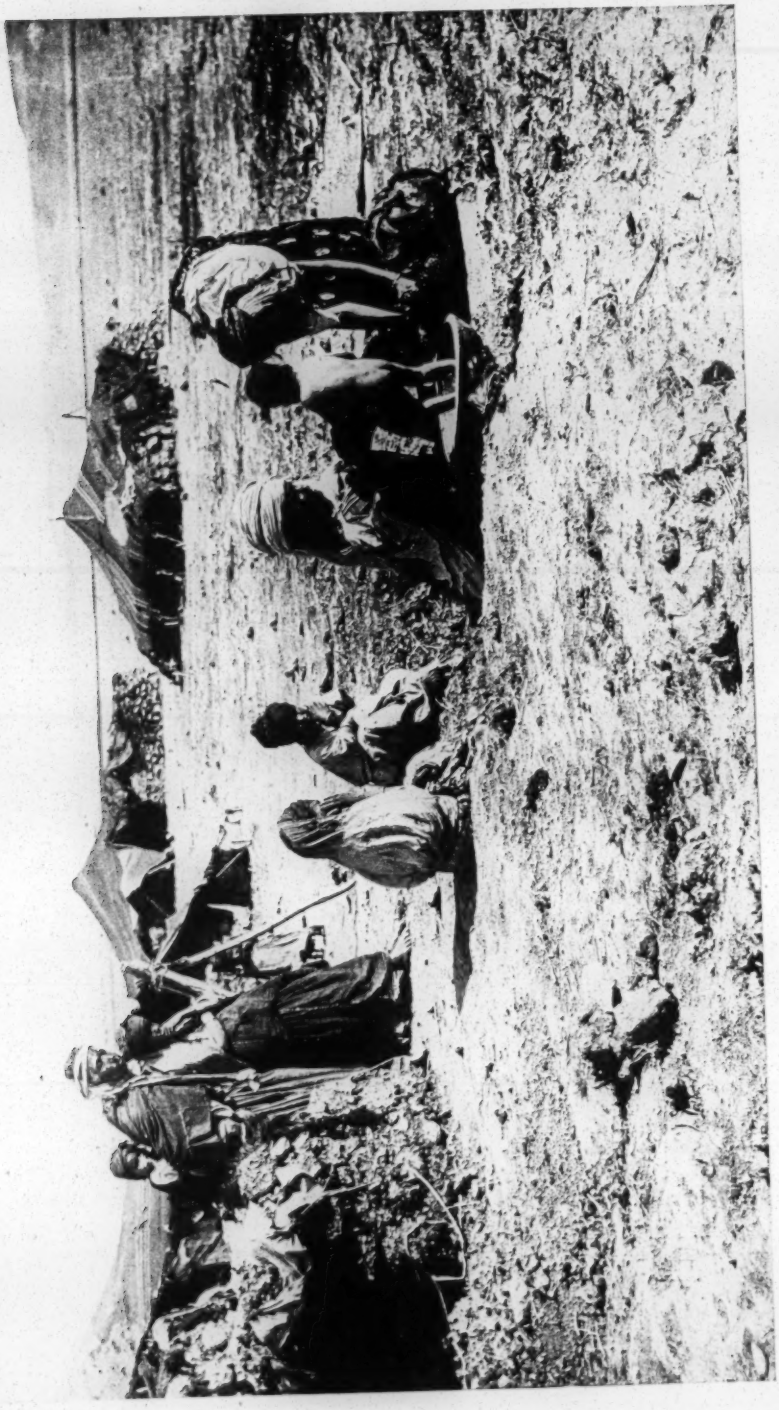
A story is told of an Englishman who was "doing" the desert, and who wished to protect his legs against the reptiles. He provided himself with tin boot-legs, and a pair are shown to travelers; but a delicious doubt exists as to whether the Englishman left them or whether they are all that is left of the Englishman.

Beautiful Biskra with her crown of palms rises before us in the sunset as we approach. The grace, lightness, and yet the suggestive strength of the wonderful trees is difficult to describe; the glow of sunset on the stems, the shadows of the sharp-pointed leaves, all need a subtler pen than mine. The sands are dyed deep purple now, with high lights of brilliant rose, and over the Sahara bends the evening sky, its blue blending into saffron and green, washed thinly with streaks of crimson. Until one has seen the sun go down over the African desert one can never conceive what brightness of color Nature carries on her palette.

The clear musical tenor of the muezzin's call floats from the minaret of the Biskran mosque:

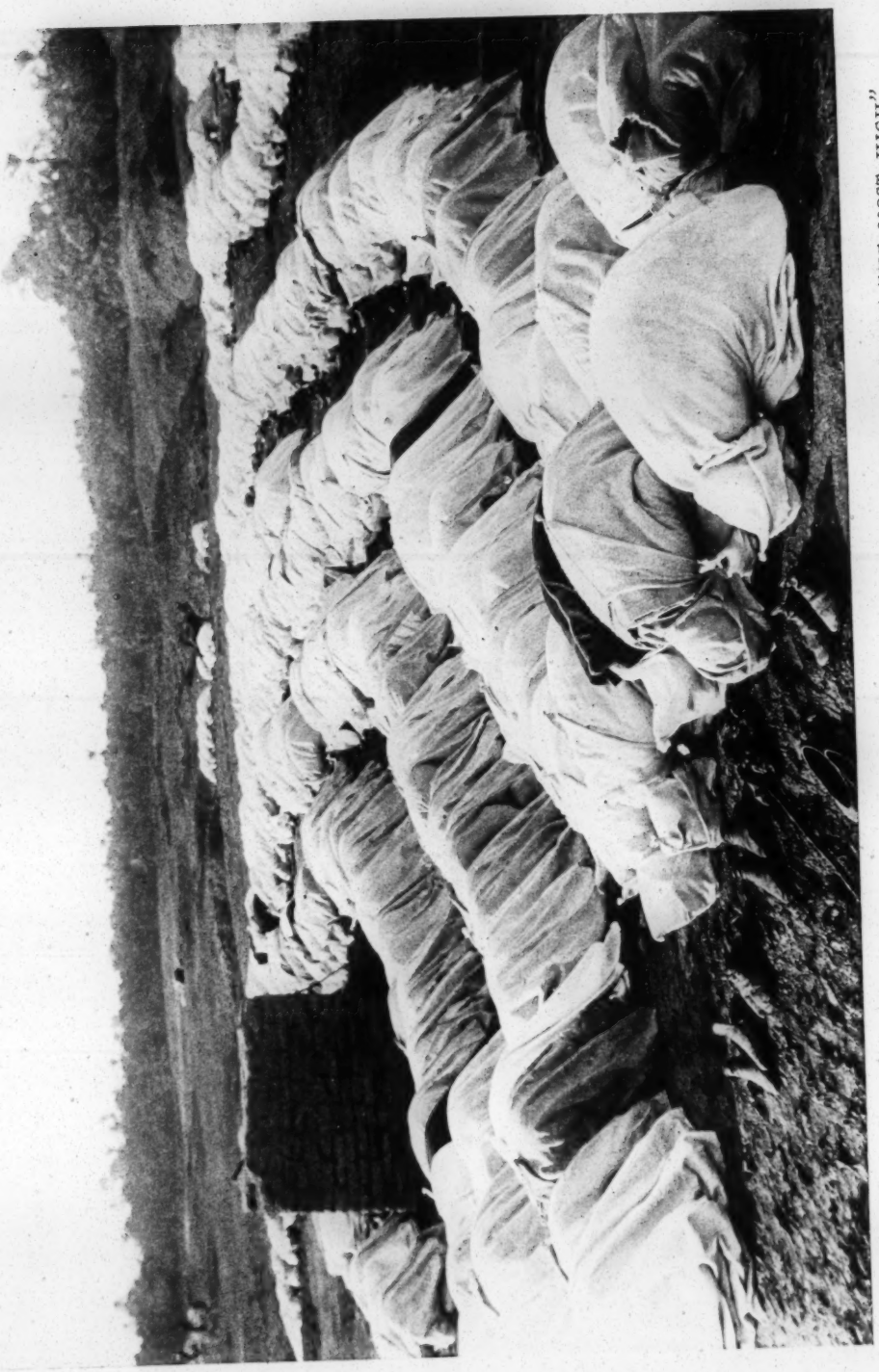
> "Come to prayer, come to prayer;
> It is better to pray than to sleep;"

and looking eastward the faithful fall prostrate. *"Allah il Allah"* (God is great) is the substance of their psalm of praise, and the motionless figures and the solemnity of the scene are beautiful in their suggestiveness. What though the heaven prayed for and the prophet worshiped seem unorthodox, there is faith, devotion, and adoration. It is an honest, earnest faith, be it right or wrong, a religion of duty and of following to the letter the law laid down by Mahomet. Even though on deliberate examination the whole system of Mohammedanism does break down, one must admit that the fervor is sincere. With the desert for their temple, their altar-fire the setting sun, their faces toward Mecca, and their hearts toward Allah, their every attitude breathes faith and devotion. Benighted they are, and unregenerate, but earnest, nature-loving, and sincere wherever the Goum surrounds the tri-colored standard of the Prophet.



BEDOUIN ENCAMPMENTS PASSED ON THE ROAD FROM BISKRA TO SIDI-OKBA

THE FOURTH POSTURE OF THE DEVOUT MUSSULMAN AT PRAYER



HE BOWS TO THE GROUND THREE TIMES, MURMURING "I EXTOL THE SANCTITY OF THE MOST HIGH"

THE FRUIT WHICH LOOKS LIKE A WATERMELON IS IN REALITY A LEMON

Weight, 7½ pounds; grown in the State of Tamaulipas, Mexico. Photo from Mr Russell H. Millward, American Vice Consul, Tampico, Mexico

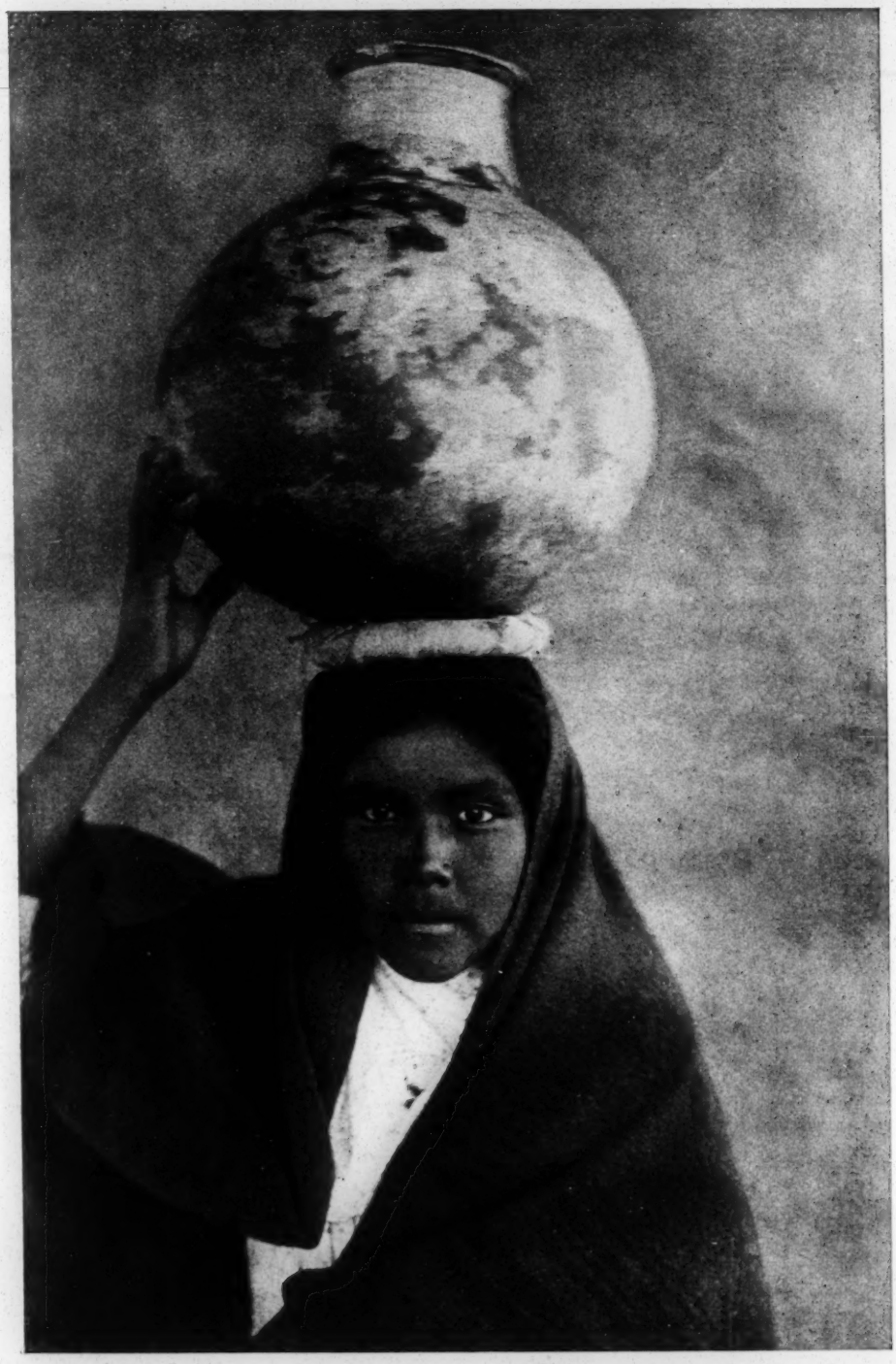


Photo and Copyright by Edward S. Curtis

QAHATIKA WATER GIRL

REMARKABLE PHOTOGRAPH OF LILIENTAL'S GLIDING MACHINE

THE enclosed photograph of Lilienthal's double-decked machine was among the last ever taken of him, I think, for I secured it only two or three days before he was killed in the same machine, at the same place—Neustadt an der Dosse.

I knew Lilienthal quite well, and made one or two short glides with this same machine, the last time we went out together. It struck me as being very unstable (in my hands), though Lilienthal managed it with great skill, rushing along at race-horse speed, 60 or 70 feet in the air, the wind playing extraordinary æolian harp music on the steel piano wires with which the framework was trussed. What impressed me most was the tremendous amount of athletic work necessary to balance the machine. He was never still a moment, swinging his legs from side to side, and on landing was always quite out of breath, though I doubt if he was in the air over thirty seconds. It seemed to require as much exertion as a hundred-yard dash.

R. W. WOOD.

Johns Hopkins University, Baltimore, Md.

LOCATION OF THE SIR JOHN FRANKLIN MONUMENT

Editor NATIONAL GEOGRAPHIC MAGAZINE,
Hubbard Memorial Hall, Washington, D. C.

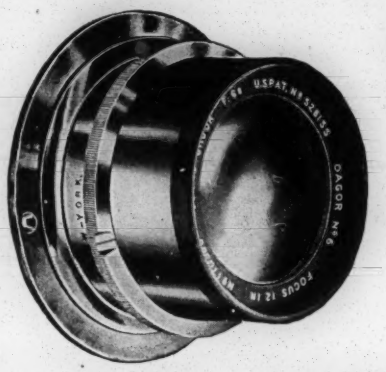
DEAR SIR: I note in the January number of the Magazine, page 67, picture of the Sir John Franklin monument, which is stated to have been "erected on King Williams Island, where the relics of his party were found."

This monument was erected, not on King Williams Island, as stated, but on Beechey Island, where the ill-fated expedition wintered in 1845–1846. The picture shows a marble slab lying on the flagged base. This is the marble tablet which was sent out by Lady Franklin in the United States expedition of 1855, under Captain Hartstein, for the purpose of being erected at Beechey Island. Circumstances prevented the Americans executing this kindly service, and it was the lot of Captain McClintock to convey it from Godhaven, Greenland, to the site originally intended. The tablet was constructed in New York, under the direction of Mr Grinnell, at the request of Lady Franklin, in order that the only opportunity which then offered of sending it to the Arctic regions might not be lost. In 1906 Captain Bernier, commanding the Canadian government steamship *Arctic* (formerly the *Gauss*), built up the concrete base and embedded this tablet therein.

The small marble tablet on the face of the monument was erected to the memory of the gallant Lieutenant Bellot (McClintock's "Fate of Sir John Franklin," page 173).

Yours truly,

JAMES WHITE,
Geographer.



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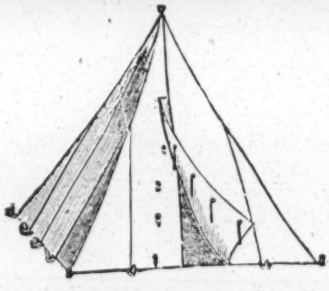

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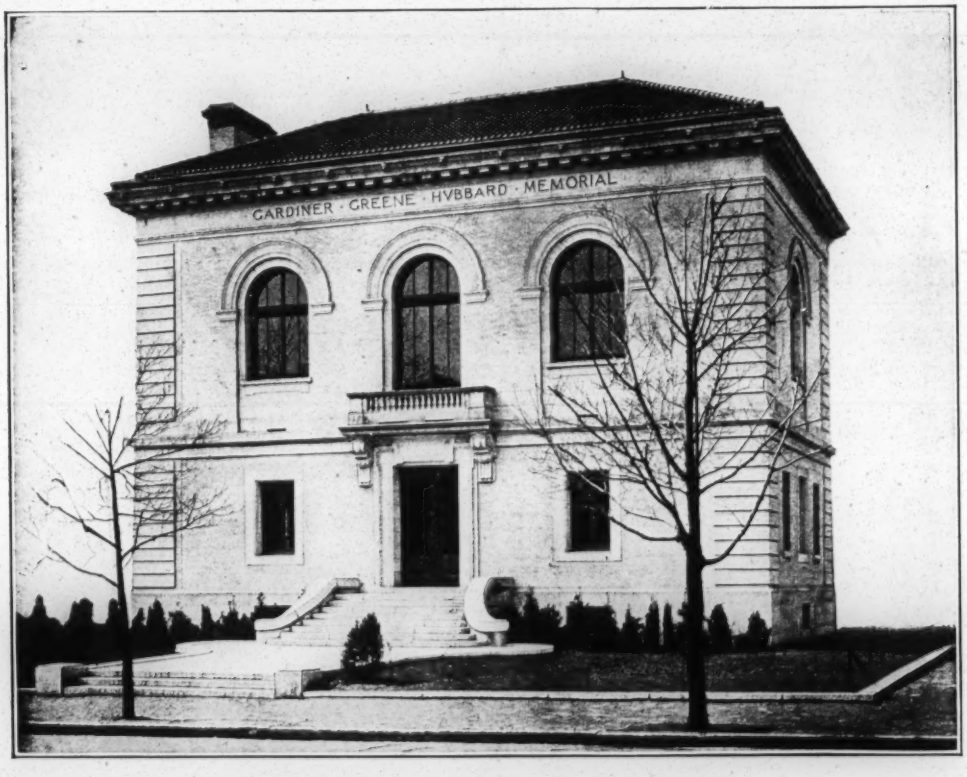

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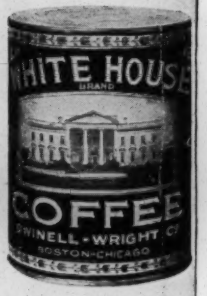

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